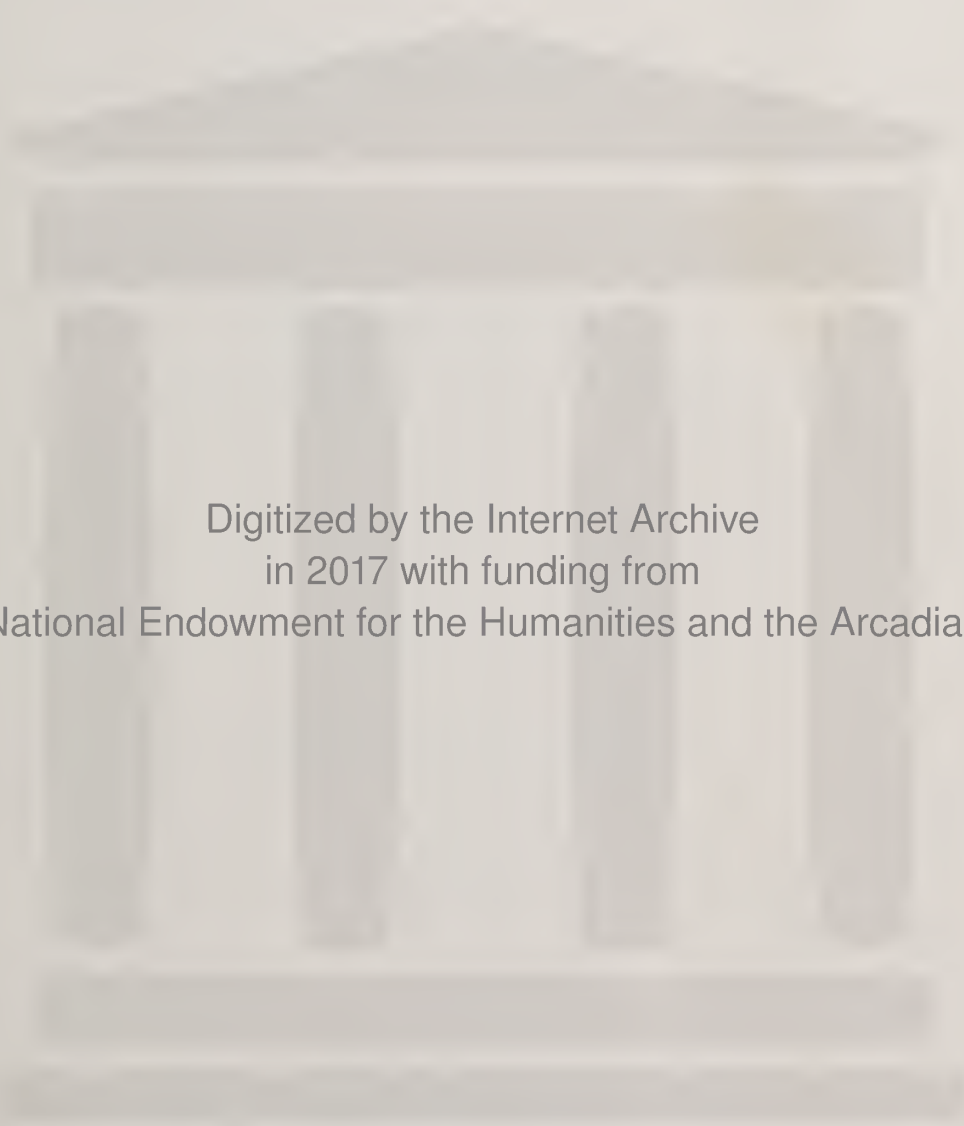


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Guest Editorial

Our Neglected Neurotics
(A Challenge and Responsibility)

ALTHOUGH the problem of emotional illness does not need to be restated, it is probably worse than most physicians stop to consider. Our neurotics use up a major share of our health plan dollar.

For each inmate of our mental hospitals, dozens of others merely cope, leading what have been called "lives of quiet desperation". These people tend to marry, the pattern is handed down for generations. Delinquent and disturbed children most often come from disturbed homes.

The majority of welfare clients are handicapped mostly by emotional difficulties. On the opposite extreme, most of our status seeking and frenetic living has a neurotic component.

At least a million Americans yearly are affected by legal divorce. The numbers involved in emotional divorce, separation, and desertion, although unknown, must be as great.

Neurotics and worse make up the larger portion of our criminal lists. Many accidents have a large neurotic component.

Alcoholism and suicide are increasing yearly. Narcotic addiction is decreasing due to rigid policing, but the lesser drugs are being abused. Stress, mostly emotional, is known to be a major etiologic factor in most medical and much surgical disease.

One can only speculate on the peculiar relationship of peace and prosperity to this pattern. Certainly there seems to be a relation to the changing mores, customs, and religious values of our day.

The cost is staggering and is probably our greatest national liability.

The greatest tragedies of course, are individual; the loss of true happiness in the presence of bodily and material prosperity.

Although this problem concerns many professions, organizations, and interests, things being what they are, a major part devolves onto the physician. I submit that in far too many cases we do less than our best.

We admit that the old family doctor seemed to do a better job; we counter that we are busy and we do have the tranquilizers. The newest pills may or may not be better than phenobarbital; in any case, neither is of much use without counsel and support.

The prosperity of medical cultists and faith healers may be laid at least in part to the partial void which is being left by the medical profession.

It is generally agreed that at least two thirds of office patients have purely or largely emotional disturbances. Despite this, many physicians are repelled by emotional problems. Some of this may be due to our medical school orientation, but part of it may be ascribed to weakness or laziness on our own parts.

To be a dedicated physician is the most demanding of professions. Though it may be more than jargon when the psychiatrist speaks of his empathy as being more effective and less enervating than sympathy, this is a scant comfort to a conscientious family doctor even after years of counseling. Surely no one could blame the harried M.D. for being a little peeved when his small hour emergency turns out to be simple hysteria. One can only hope that he is able not to communicate this to the unfortunate patient.

This broad area of medical practice is often the least satisfying by almost any measure. Its scope and seriousness, however, impose an obligation that is incumbent on every physician, however narrow the limits of his specialty.

Patients may become offended; many would prefer exploratory surgery for some symptom complex rather than to be faced with the unpleasant fact of neurosis. As proof, consider the ratio of surgeons to psychiatrists when the ratio would much better be reversed.

Actually, the family doctor should handle these problems himself; were this not so, there would be an impossible shortage of psychiatrists and counselors.

Should the practitioner not be able to truly counsel and support because of limits of his time or his own emotional stamina, he may then refer the patient, but is more apt to abandon him emotionally in one of several other way. Exploratory surgery is often one such way. The flat statement "I find nothing physically wrong with you" is another. This last plus a

prescription but without counseling is still another. Over-emphasis of a mild physical finding such as slight hypertension or anemia is another.

This is not to ask the physician to take the weight of the world on his shoulders, but to do a more workmanlike job on patients he sees many times daily.

One answer to this problem is the employment of lay counselors. In every community there are mature generally highly religious people who have a natural ability and motivation for counseling. These people, properly selected and indoctrinated, may be used under the supervision of physicians as "emotional technicians".

My own experience with such a person has been highly satisfactory. I believe my patients get better service by delegation of a portion of their counseling. I recognize this as a sensitive situation, but one which I am prepared to defend as morally, ethically, and legally correct.

In several teaching centers in this country, there are courses in which preachers can take medical indoctrination including a form of internship for professional counseling, and I expect to see the time when this will spread to others who are similarly motivated.

At present in Virginia and also in most states, there is no legislation to prevent any person who feels himself qualified from going into the practice of counseling patients. Would it not be a good thing if the medical profession would welcome properly qualified people to work with them?

To paraphrase from Robert Louis Stevenson's essay in tribute to the physician, "If the physician cannot cure as often as he would like, he can always comfort."

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Indications for Splenectomy

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The indications for splenectomy have broadened over the past few years. These indications as well as the results to be expected are of interest.

MORE THAN 2000 YEARS AGO, Galen said the spleen was an organ of mystery. Today it is still one of the few organs of the body that is somewhat of an enigma. Many attempts have been made to investigate its function and to understand why there is enlargement in certain blood dyscrasias and not in others. Also, many investigators have tried to determine whether the spleen is primarily at fault or secondarily affected in these conditions and to study the many problems of diagnosis and therapy involved.

In order to understand fully the pathological conditions of the spleen we must first know its normal functions. At the present time it is agreed by most observers that the following are among its more important known activities.

1. It has definite phagocytic and reticuloendothelial activity and is capable of phagocytizing dead cells and parasites, bacteria and particulate matter.

2. It filters out battered up cells and also inclusions from red cells.

3. It has an hemopoietic function which normally is the most important during embryonic life, although it may regain importance during disease.

4. It is an important site of antibody

production and may contribute to the immuno-allergic mechanisms which are important in the pathogenesis of some of the hematologic disorders.

5. There is evidence that the spleen exerts a hormonal influence which regulates the maturation and release of the cellular elements of the blood from the bone marrow, but this evidence is not accepted by all authorities.

6. It is thought by some that it provides a reservoir for erythrocytes that can be called upon when necessary. This is true of the dog but is questionable in man.

A number of students of the spleen have attempted to classify its diseases and particularly those conditions in which splenectomy has been considered valuable in their treatment. Because of the fact that there is little unanimity of opinion among the hematologists as to the pathological physiology of the spleen, there is no one classification accepted by all.

Doan, Zollinger and others speak of hypersplenic syndromes and divide them into primary and secondary states. Doan believes that in these conditions there is hypersequestration and phagocytosis of the cellular elements of the blood by the spleen. Dameshek also speaks of primary and secondary hypersplenism, but he believes there is a humoral substance elaborated by the spleen which inhibits the maturation and/or delivery of the cellular elements. There are others who feel that in the so-called hyperactive spleen there are antibodies in the circulation which cause the peripheral destruction of the blood cellular elements.

On reporting results of splenectomy, Heaton, DeWeese and Collier, Zollinger and others have grouped their cases under the

head of Primary and Secondary Hypersplenism and some have added a third unclassified group. After discussion with Dr. Lockard Conley, Professor of Medicine and Chief of Hematology at The Johns Hopkins, it seems impossible to have any accurate classification that will group together all the various blood disorders that may be benefited by splenectomy.

Over the past few years the indications for splenectomy have gradually broadened. This fact alone emphasizes the necessity of having the advice and guidance of a competent hematologist who has studied each case very carefully before any decision is reached with respect to splenectomy. Not only is the study of the peripheral blood important, but this must be correlated with what is found in the bone marrow. It is by careful evaluation of the latter that the possible benefits from splenectomy can be judged. An adjuvant procedure which may be of some help in equivocal cases is the injection of 1 cc. of 1:1000 adrenalin solution. Following this repeated counts of the peripheral blood are made to find out if there is improvement when the spleen contracts. If so, removing the spleen will probably benefit. With proper pre-operative studies and preparation, splenectomy can be carried out with a relatively low mortality, and a reasonable morbidity in most cases and also with no untoward late results.

Let us now consider some of the more common hematologic and other conditions where splenectomy is indicated and then discuss briefly some of those conditions that are questionable.

Primary or essential thrombocytopenic purpura is one of the more common blood dyscrasias. It is marked by the scarcity of platelets, often no more than 10,000 or less, in the peripheral blood. Petechial hemorrhages in the skin and mucous membrane occur in nearly every case. Hemorrhage from the gastro-intestinal tract is common and bleeding in the central nervous system happens frequently and can have serious consequences. The bleeding time of these

patients is prolonged and there is poor or no clot retraction. On physical examination the spleen is small and usually not palpable. In fact, some observers feel that if the spleen is enlarged the condition is probably not a primary thrombocytopenic purpura, but is secondary to some often unknown cause. Study of the bone marrow shows the presence of adequate megakaryocytes.

With the introduction of steroid therapy, it was hoped that surgery would not be necessary in as many cases in the treatment of idiopathic thrombocytopenic purpura. This hope has not been realized to the extent it first seemed possible. It is true, however, that some children can completely recover on this therapy, and, many other cases can be tided over a crisis so that operation can be carried out under more favorable circumstances and thus increase the number of good results. Transfusions of whole blood are most beneficial particularly when given just prior to surgery, since the blood temporarily increases the platelets but perhaps more important, the blood volume which usually is low in this condition will be restored to a more nearly normal level.

There is a question that the spleen plays a role in the formation of antibodies. The earlier in life that splenectomy has to be performed, the more likelihood there is that an overwhelming infection may develop. Swenson feels this to be true. However, he does not believe, as others have thought, that there is any proof that disseminated lupus occurs as a result of splenectomy in children for purpura or hemolytic anaemia. If complications can be avoided, it has been proven that anyone can lead a perfectly normal life without the spleen.

It is, therefore, important that extreme care be exercised to avoid infection both pre- and postoperatively. The judicious use of antibiotics is helpful in most cases and it can prove to be life saving in some. If steroids had been used preoperatively, it is important that they be continued up to the time of operation and also for a time post-

operatively because otherwise there is danger of adrenal insufficiency.

Congenital Hemolytic Icterus or Hereditary Spherocytosis can be completely controlled by splenectomy. It is agreed by all hematologists that when the diagnosis is confirmed, operation is always indicated. Not only this, but members of the patient's family should be carefully screened and any who can be shown to have definite evidence of hemolytic icterus should also have splenectomy. This dyscrasia always has a familial trait but at times this may not be easy to develop. The condition is inherited as a Mendelian dominant. Because of the frequent crises, there is fluctuating acholuric jaundice and an anaemia which at times can be quite profound. The red cells shows 100% spherocytosis and there is reticulocytosis. Also, there is increased fragility of the R.B.C. and the serum bilirubin is increased. The spleen uniformly is enlarged and the bone marrow shows hyperplasia of the erythroid elements.

Many times the surgeon is called upon to do a splenectomy for congenital hemolytic icterus when the patient is apparently in a grave condition, surgically speaking. The hemoglobin may not even be 10 gms. and the red cells may number only 2.5 million or less. However, these patients can go through the operation quite easily and will uniformly do well. With the amount of anaemia that is present there is a temptation to give whole blood before the operation. This should not be done because of the danger of precipitating a crisis and increasing the amount of hemolysis of the red cells.

Transfusions can be started after the spleen has been removed or even after the splenic artery has been clamped. This latter can be accomplished soon after the abdomen is opened because the vessel can be easily located running close to the superior edge of the pancreas.

There is quite a large group of acquired hemolytic anaemias, as opposed to the congenital type, where splenectomy is indicated. Even though the immediate results may be

encouraging in these cases after splenectomy, the long term results may be discouraging in a considerable number. The findings in this group are very much the same as in the congenital hemolytic anaemias except that there is no familial history and the process does not manifest itself, as a rule, until later in life. Often the spleen is not very large and the spherocytosis may be no more than 50% while the fragility of the R.B.C. may be increased very little, if at all.

Besides the above mentioned groups of cases there are other miscellaneous anaemias that may, under certain conditions, be considered for splenectomy. Among these are some of the pancytopenias, rarely, certain leukemias and some patients showing myelofibrosis or hypoplastic anaemia. There can be no definite criteria laid down in these groups to decide whether surgery should be employed. Each case must be studied by the hematologist and he must make the decision after considering all the various factors.

So far in this discussion we have considered those conditions where some form of anaemia with or without splenic enlargement has been the primary pathologic entity. There is an heterogenous group of splenomegaly cases which should be mentioned where splenectomy can often prove to be of considerable benefit. In many of these patients the definite diagnosis cannot be determined before operation. Among those which should be included are localized Hodgkins disease and lymphosarcoma. Also it is not uncommon to find cysts of the spleen and less often there may be xanthomatosis lipoid, Felty's syndrome or Gauchey's disease. In most of the above mentioned conditions splenectomy is not carried out just because there is a splenomegaly, but because of other symptoms and findings which give reason to believe benefit will result. Also, as indicated above, there is a small group where splenectomy alone can give the diagnosis. Some physicians have advocated needle biopsy of the spleen in certain selected cases and this has apparently proved beneficial at times. However, I can-

not help but feel that this procedure is not without danger since I know of at least two patients who have had appreciable intra-peritoneal hemorrhage following puncture.

Trauma of various kinds is the reason for many splenectomies. This may be caused by external force as in automobile or other accidents, or it may be secondary to surgical operations. If it can be determined beyond a reasonable doubt that there has been rupture of the spleen, this is the most important condition that demands emergency splenectomy. Uncomplicated rupture of the spleen can be an obvious and easy diagnosis to make, combining a history of trauma, pain in the upper left abdomen and flank, together with splinting of the abdomen and leukocytosis with increasing signs of anaemia. However, in the majority of cases there are multiple injuries including brain trauma so that the picture is often not at all clear. In general if there is reasonable presumption that the spleen has been ruptured, no matter how slightly, laparotomy is indicated.

Late rupture of the spleen following what might seem like slight trauma, and occasional spontaneous rupture occurs often enough so that we must remain constantly alert to the possibility. Recently two quite interesting and instructive cases have been called to my attention. One was the case of a young man who one week-end last winter was skating and fell, and as he went down on the ice, he was struck by a hockey stick in the left side of the abdomen. He got up immediately and went on skating for more than an hour without any untoward symptoms. That night he noted that he was sore in his left flank and also felt some discomfort in his left shoulder. These symptoms persisted for two days but being a normal college boy he made no complaints and went about his usual activities. Nine days after the minor accident the young man was sitting in a class and he suddenly became faint and knew that something was wrong. An alert physician at the college infirmary recognized the probability of intra abdominal hemorrhage and at operation the patient was shown to have had a large subcapsular hem-

orrhage of the spleen which later ruptured and there was more than 1000 cc. of blood in the peritoneal cavity. Splenectomy was accomplished without difficulty and prompt recovery ensued.

Spontaneous rupture occurred in another student who was a patient in the college infirmary with a severe case of infectious mononucleosis. It was known that the spleen was somewhat enlarged, but it had not been tender. One day without any warning there developed signs of intra abdominal hemorrhage and evidence of probable splenic rupture. Emergency operation confirmed the presumptive diagnosis and splenectomy was carried out with prompt recovery of this patient.

Injury to the spleen occurs in a definite percentage of cases incidental to certain upper abdominal operative procedures, and if it is not recognized it can have serious consequences. In gastric resections or left colon operations, particularly resection of the splenic flexure, the capsule of the spleen can be torn by retractors or the injudicious placement of abdominal packs. This fact must be borne in mind constantly. It is embarrassing to the surgeon and not helpful to the patient to find bleeding from a torn splenic capsule when a difficult resection is apparently finished. The only thing that can be done is to remove the injured organ. This accident has happened to me on two occasions, but, fortunately, each time the tear in the splenic capsule was recognized before closure of the abdomen.

Incidental splenectomy is being carried out quite often and it can facilitate major cancer surgery. This may be done in order to remove all avenues of possible spread, or it may be because extension has already taken place. There is usually no added morbidity in the former instances but the surgeon must constantly keep in mind the proximity of the tail of the pancreas. Injury to this organ is quite common. There is no evidence that the mortality rate is increased by incidental splenectomy.

The management of portal hypertension

and bleeding esophageal varices can be a severe trial for both physician and surgeon and many of the aspects of the proper treatment of these conditions are beyond the scope of this discussion. However, in true portal hypertension, with or without bleeding varices, nearly 75% will have enlargement of the spleen and a number of factors will determine whether splenectomy alone or splenectomy with spleno-renal shunt or porto-caval shunt should be accomplished, if surgery is employed.

In many of these patients there is some degree of blood dyscrasia and this fact must be recognized and taken into account.

Some word should be said about the technique of splenectomy and also about certain important pre- and postoperative considerations. In those patients with bleeding tendency, extreme care should be exercised by the anaesthetist to cause a minimum of trauma during the induction period, and while the patient is asleep. Intubation and intra tracheal tubes should be avoided and also nasogastric tubes. It must always be remembered that hemorrhage from the gums and air passages occurs frequently in these patients. Whole blood transfusion many times is essential but, as mentioned above, in those patients who have increased fragility of the R.B.C., transfusion should be reserved at least until the splenic artery is ligated.

The type of incision to use for splenectomy can be a matter of personal preference of the surgeon. However, there are certain considerations that should be borne in mind. For a simple ruptured spleen I feel that a left subcostal incision is not only adequate, but also the most desirable from the patient's standpoint. In most other conditions the left para median incision of ample length will prove to be the best. There are a number of sound reasons to back this up. In thrombocytopenic purpura the surgeon should always remember the possibility of the presence of accessory splenic tissue and adequate exposure is needed for the search. Accessory spleens will occur in up to 15% of these patients, and they should be re-

moved. In congenital hemolytic jaundice the incidence of gall stones is quite high and cholecystectomy should be carried out if cholelithiasis is found. In many of the splenopathies a biopsy of the liver will be helpful in the total diagnostic picture, and this should be accomplished with meticulous care. Also the presence of any enlarged glands should be searched for and one or more removed for biopsy.

Splenectomy can be an easy operation technically and it can also be most difficult when there is considerable enlargement, or if the blood supply is increased, particularly through the normal and at times abnormal attachments to other structures. It is most helpful to locate and ligate the splenic artery soon after the abdomen is opened. This can be reached by going through the lesser omental sac and just above the edge of the tail of the pancreas the vessel can be felt and usually seen. After this is ligated, the surgeon can proceed deliberately to isolate and ligate the vessels, always bearing in mind the proximity of the tail of the pancreas below and the fundus of the stomach above. Early in my surgical career, as a third year medical student, I was impressed by the vicissitudes that can befall the surgeon during the operation for splenectomy when I heard Dr. William J. Mayo list the unexpected and unwanted complications he had experienced. It was indeed a formidable list of accidents. Even the most skillful surgeon must exercise extreme care to identify each structure before placing a clamp or dividing tissue. Also, the gentle handling of tissues will avoid trouble, particularly in patients who have any degree of obesity. It goes without saying that careful hemostasis is essential. Many surgeons do not feel that it is necessary to place a drain in the wound following removal of the spleen. I cannot help but feel that one or two well placed drains will decrease the morbidity, particularly when there was a large spleen or if there was any question of hemostasis or injury to the pancreas. In the latter case a sump type of drain is most valuable. This

can be accomplished readily by threading a No. 14 French catheter through the ordinary cigarette drain and then maintaining a gentle suction on the catheter.

Let us examine a consecutive group of 116 splenectomies that were carried out at The Johns Hopkins Hospital in a recent five year period.

THROMBOCYTOPENIC PURPURA	
Idiopathic	16
Tetralogy of Fallot	1
Disseminated Lupus	1
Total	18
Thrombotic Thrombocytopenic Purpura	1

Fig. 1. This shows that there were 19 thrombocytopenic purpura cases, 16 of which were idiopathic and of the two others, one was associated with the Tetralogy of Fallot and the other had disseminated lupus. The 19th case was a thrombotic type of thrombocytopenic purpura.

HEMOLYTIC ANEMIAS	
Hereditary Spherocytosis	7
Acquired Hemolytic Anemia	9
Total	16

Fig. 2. The hemolytic anemias are shown and seven of these cases were congenital hemolytic jaundice, while the other nine were of the acquired type.

MISCELLANEOUS ANEMIAS	
Pancytopenia	1
Leukemia	3
Myelofibrosis	1
Hypoplastic	6
Pancytopenia	3
Granulocytopenia	2
Thrombocytopenia	1
Total	11

Fig. 3. This shows a group of miscellaneous anemias—11 in all, for which splenectomy was done.

MISCELLANEOUS SPLENOMEGALY CASES	
Hodgkins Disease	2
Lymphosarcoma	1
Xanthomatosis Lipoid	1
Felty's Syndrome	1
Cyst of Spleen	1
Cause Unknown	2
Total	8

Fig. 4. There were eight miscellaneous splenomegaly cases.

TRAUMATIC RUPTURE OF SPLEEN	
External Trauma	12
Acute	10
Delayed	2
Secondary to Operative Procedures	13
Total	25

Fig. 5. Shows the traumatic rupture of the spleen and it should be noted that 12 were caused by external trauma, whereas 13 were secondary to operative procedures.

CAUSES OF SPLENIC TRAUMA SECONDARY TO OPERATIVE PROCEDURES	
1) Mobilization of Stomach Before and During Gastrectomy	8
2) Injury by Retractor	1
3) Mobilization of Splenic Flexure	2
4) Capsule Torn During Vagotomy	1
5) Unexplained Tear in Capsule	1
Total	13

Fig. 6. Shows the causes of splenic trauma, secondary to operative procedures.

SPLENECTOMY INCIDENTAL TO SURGICAL OPERATIONS	
Malignant Disease	19
Non-Malignant Disease	2
Total	21

Fig. 7. It can be seen in Fig. 7 that splenectomy was carried out as an incidental procedure in 19 patients with malignant disease and two patients with non malignant conditions. One of these latter was a subtotal removal of the pancreas for calciferous pancreatitis and the other for a large cyst in the tail of the pancreas.

PORTAL HYPERTENSION WITH ESOPHAGEAL VARICES	
Normal Liver	3
Cirrhotic Liver	7
Portal Block	3
Total	13

Portal Hypertension Without Esophageal Varices 3

OPERATIVE PROCEDURE IN PORTAL HYPERTENSION CASES	
Porto-Caval Shunt	3
Splenorenal Anastomosis	8
Splenectomy Only	5
Total	16

Figs. 8 & 9. These show us the patients with portal hypertension.

Operative Mortality	Cases	Deaths	Rate
Thrombocytopenic Purpura	18	2	11%
Hemolytic Anemia	16	0	0
Miscellaneous Splenomegaly	8	0	0
Miscellaneous Anemia	11	0	0
Portal Hypertension	16	1	6.3%
Traumatic Rupture	25	2	8%
Total	94	5	

Fig. 10. The operative mortality is shown for all cases except those where the spleen was removed incidently. It is interesting one of the cases of thrombocytopenic purpura that died had hemorrhage in the meninges, whereas, the other patient had a cerebral hemorrhage.

RESULTS OF SPLENECTOMY

		Im-	Un-Im-	No Fol-
	Death	proved	proved	lowup
19 Thrombocytopenic Purpura	2	14	1	1
16 Hemolytic Anemias	3	11	1	1
12 Traumatic Rupture	1	9	0	2
16 Portal Hypertension	7	6	2	1
8 Miscellaneous Splenomegaly	3	2	0	3

11 Miscellaneous Anemias	5	4	1	1
82	21	46	5	9

Fig. 11. Shows the results of splenectomy in all cases except the 13 cases secondary to operative trauma and the 21 patients where the spleen was removed incidental to other surgical procedures.

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Relieves Infant Spasms

Hormone therapy reduced the frequency of seizures in 52 per cent of 21 children suffering a type of epilepsy associated with physical and mental retardation, medical researchers have reported.

The patients were given corticotropin, cortisone, or both, J. Gordon Millichap, M.D., and Reginald G. Bickford, M.B., Mayo Clinic, Rochester, Minn., said in the November 3 Journal of the American Medical Association.

Corticotropin, secreted by the pituitary gland, stimulates the adrenal cortex, or outer part of the adrenal gland, to produce cortisone.

At the time treatment was begun, the patients ranged in age from one-half month to five years. Fourteen were mentally retarded.

Fifteen of the children were treated with corticotropin alone, two with cortisone alone and four with both. Seizures were reduced in frequency in 11 of the 21.

The study showed that the response of those who received corticotropin was related

significantly to the age of the patient at the time treatment began.

In the 19 who received corticotropin, seizures were controlled in 8 of 10 infants less than 1 year of age but only in 2 of 9 children over 1 year of age.

The beneficial effects of hormone therapy appear to be "real" because of a relatively rapid response and because previously administered anticonvulsant drugs were ineffective.

No significant or permanent improvement in the level of intelligence was associated with the treatment.

The mechanism of the anticonvulsant action of corticotropin is unknown, the physicians pointed out. However, it is possible that the basic cause of the seizure disorder is biochemical abnormality of genetic or acquired origin and a failure of certain enzymes to mature.

Control of the spasms by corticotropin might be due to the stimulating effect of the biochemical maturation of the brain and on the development of enzyme systems that inhibit the seizures.

A Bunion Operation

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A previously undocumented bunion operation is described. The authors have had good results in a large series of cases.

WE ARE PRESENTING a bunion operation which we think is quite satisfactory, and which we began doing about 1946 when it was called to our attention by Dr. Foy Vann of Norfolk, Virginia. According to his son, Dr. John Vann, he never published it, and, consequently, we cannot be sure we are doing the same operation that Dr. Vann did. In fact, we feel sure that we have modified it considerably. Years later, we were discussing this operation with Dr. John Vann, and he asked whether we were lengthening the extensor hallucis longus tendon as his father did. We have not found this necessary, and did not realize that Dr. Foy Vann did. We desire to give all the credit of the original idea of this bunion procedure to Dr. Foy Vann, and since our results have been excellent following this operation, and better than with any other type we have done, we feel that most of the essentials of the operation are the same as he would have recommended. The only information we have was his description at one of the local medical meetings while we were just sitting around discussing bunions.

Numerous operations have been recommended for the correction of bunions and many types have been given excellent results. Nearly all of the operations leave something to be desired, which leads to the constant search for an operation which will be effective and relatively safe.

It has been pointed out many times that there is usually a metatarsus primus varus in cases with bunions and, of course, Dr. Lapidus has felt that correction of this deformity with fusion of the bases of the 1st and 2nd metatarsals was the most important aspect of treatment. Numerous other procedures, such as transplanting the adductor hallucis, have been recommended and sometimes assist in correcting this deformity, as well as the bunions. Various sling operations have been suggested, with tendons around the metatarsal necks, and osteotomy at various levels in the first metatarsal to help correct the varus have been advocated and sometimes function quite well, as in Dr. Mitchell's operation. It has been interesting to note, however, that in recent years Dr. Lapidus has stated that in many instances it is not necessary to correct the varus of the first metatarsal, but that correction of the valgus of the great toe, and the removal of the exostosis over the head of the first metatarsal, may give quite satisfactory results.

We have been quite pleased with the effectiveness of the McKeever bunion repair for the arthritic first metatarso-phalangeal joint, but do not feel that this operation is justified in the average case of bunions.

This operation which we are presenting has appealed to us because of its simplicity and its basic recognition of the pathology involved in the case of bunions. We all know that as the great toe goes over into valgus, the portion of the first metatarsal head, which ordinarily is covered with thick articular cartilage, degenerates, leaving only a thin eroded cartilaginous surface, whereas the part in contact with the base of the phalanx continues to have good cartilage. We also note that as the great toe

goes into valgus, the long extensor tendon slides off and towards the middle of the foot to act as a bow string and continues to pull the toe into more valgus.

We feel that operations for bunions should be done only for relief of pain or for extremely severe cosmetic difficulties and certainly not for the minor ones. This operation (Vann) admittedly does not always give perfect appearance of the foot, but is



Fig. 1



Fig. 2

articulate with the eroded cartilage of the medial aspect of the head of the first metatarsal. By leaving the base of the phalanx in the position in which it has been functioning for many years, and by simply osteotomizing the base of the phalanx to correct the alignment of the toe, we feel that far less arthritic changes develop postoperatively. We also feel that the long extensor tendon comes back into almost normal position, thereby removing a deforming element as shown in Figs. 1 and 2.

The operation is relatively simple. A curved dorso-medial incision is made and the skin and subcutaneous tissues are reflected toward the plantar surface of the foot as shown in Fig. 3. A "U" shaped flap is cut with its base proximally going down through all the soft tissues to the cortex of the metatarsal head superiorly and inferiorly, or this can be cut in a semi-curved manner from above downward toward the plantar surface as shown in Fig. 4. This flap, composed of the bursa, the insertion of the abductor hallicis, and the capsule of the joint,

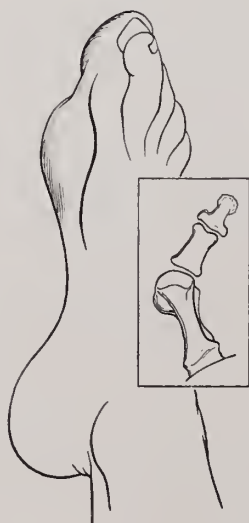


Fig. 3

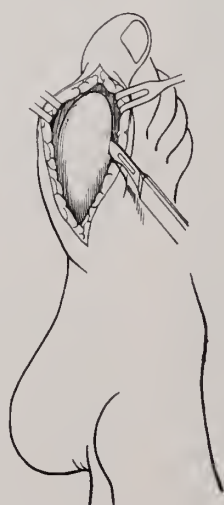


Fig. 4



Fig. 5

quite good in relieving pain by removing the exostosis and does straighten the toe to a satisfactory extent. At the same time, it does not bring the normal articular cartilage of the base of the proximal phalanx over to

is reflected proximally and left attached. The exostosis overlying the head of the 1st metatarsal is then carefully removed, shaping the bone to as rounded a shape as possible, attempting to eliminate all pointed prom-

inences. The base of the proximal phalanx is exposed and an osteotomy of the base of the phalanx is then performed, cutting out a wedge with its base medially, as shown in Fig. 5. This osteotomy can best be done

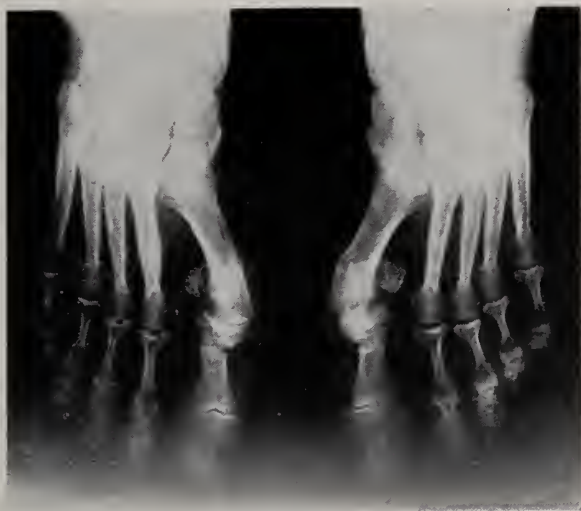


Fig. 6



Fig. 7

with small rongeurs, and should be done approximately one quarter to one half inch distal to the joint. The osteotomy is not carried entirely through the toe, but the lateral aspect of the phalanx is broken in a greenstick fashion, correcting the alignment of the great toe and if there is rotation of the toe present, it can be corrected at this time. The flap of the capsule, tendon insertion, and bursa, are then drawn distally as far as possible, and sutured to the periosteum

of the proximal phalanx, distal to the osteotomy site. Several extra sutures are placed superiorly and inferiorly to fasten the flap and to prevent it from migrating. The subcutaneous tissues and the skin are

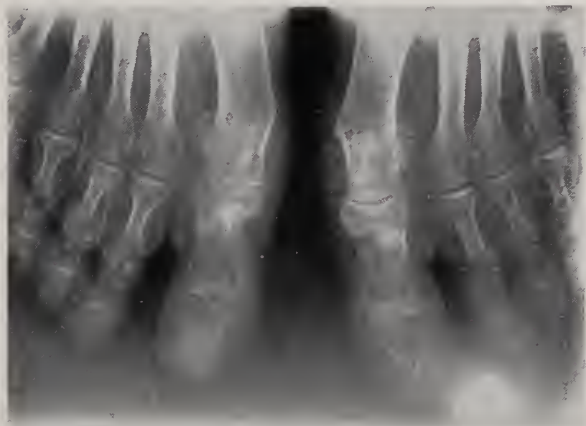


Fig. 8

then closed in layers and a gauze dressing is applied in a figure of 8 fashion to maintain the corrected position of the great toe. Usually there is enough blood on this to harden and make a fairly good cast. If you feel that it is necessary, in some cases, a tongue depressor splint or aluminum splint can be used, but quite often all that is needed is a gauze sponge between the first and second toes to hold the toe in proper position. If a hammer toe is present, this can be corrected, but if it is, it should be fixed with an intramedullary pin unless you are going to use a splint to hold the osteotomized great toe in position. We have not felt it necessary to do a capsulotomy of the lateral aspect of the MP joint, because the position of the joint is not changed. Patients are allowed up and to the bath as soon as they are comfortable and this is usually on either the second or third postoperative day. We have allowed them to leave the hospital in four to five days, with a cut-out shoe. These patients seem to have less pain than with the other bunion procedures we have done, and are up and moving much sooner. We feel that the toe must be held in the varus position for a total of six weeks. After the third week, nothing more than a toe-spreader is needed, and quite often we have

patients buy the so-called "toe-flex" put out by Scholl's, and wear socks at night and sleep with this toe spreader. In this manner, they can wash their feet and begin to supple the MP joint. They are usually ready for their shoes at the end of six weeks. In general, the results have been quite satisfactory. Figs. 6, 7 and 8 show x-ray appearance after bony healing.

DISCUSSION

Cosmetically, the feet may not look quite as good as those from some other operation, but, functionally, they seem better, with very little stiffness of the MP joint and with no tendency to go into hallux varus. The poor results which we have had with this operation have not been because

of the operation, but because of the fact that originally we did not immobilize the osteotomized toe but three weeks and, consequently, some recurred. A second cause of failure was due to the fact that the hammer toe was not fixed with an intramedullary pin. Therefore, it did not keep the great toe in its corrected position. We have done well over three hundred of these cases over a period of fourteen years and the results are so good that we have given up all other types of bunion operations except the McKeever when it is indicated. We feel it is a very satisfactory, easy operation for bunions, and one with very few complications.

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Medical Education Loan Program

A far reaching new medical education loan guarantee program is now under way in American medicine. The goal of this program is to help eliminate the financial barrier to medicine for all who are qualified and accepted by approved training institutions. It is designed to provide a means of financing a substantial portion of the cost of a medical education.

The loan program for medical students, interns and residents is the result of a cooperative effort by American medicine and private enterprise.

The program is administered by the American Medical Association's Education and Research Foundation. The ERF has established a loan guarantee fund. On the basis of this fund, the bank will lend up to \$1,500 each year to students. The ERF in effect act as co-signer. For each \$1 on deposit in the ERF's loan guarantee fund, the bank will lend \$12.50.

More than 3,300 students, interns and residents have borrowed more than \$6,000,000 through this fund since it was started last February. Physicians and others have contributed almost \$700,000 to the loan guarantee fund, which makes possible these loans.

The guarantee fund is almost depleted and more money is needed immediately to keep up the loan program. Eventually it will become self-sustaining as loans are repaid, but right now substantial financial help is needed. Your check to the AMA-ERF, 535 North Dearborn St., Chicago, will help to keep this important program viable. Contributions to the Foundation are tax deductible.

Cytology Application In Uterine Cancer Diagnosis

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The Pap smear is of proven value in detection of cancer of the uterus.

EXFOLIATIVE CYTOLOGY is now considered the most important and practical method available for cervical cancer detection. The popularity of this method has continued to increase since introduction by Papanicolaou in 1943,¹ and is now widely used in the United States. In spite of this popularity, probably less than 10% of the fifty million women in the United States over twenty years of age have been so screened, and approximately 14,000 women continue to die annually in the United States from carcinoma of the uterus.² This is particularly unfortunate since early detection, diagnosis and treatment of uterine carcinoma can be more easily accomplished and result in higher cure rates than is possible in most other neoplastic diseases. In hopes of increasing early cancer detection by screening more women with cervical Papanicolaou smears this review is presented.

Method

Numerous methods of obtaining and preparing smears have been described to fit particular needs, and these are reviewed by Wied.³ General screening by most physicians is best accomplished by visualization of the cervix using a dry bivalve Sims vaginal speculum. The ectocervix is then scraped with a tongue blade broken to give a sharp edge or with the specially designed Ayre spatula.⁴

The squamo-columnar junction is scraped in its entirety since over 90% of cervical carcinomas arise from this area. This material is then smeared evenly over a dry glass slide. Following this, the posterior fornix pool of secretions is aspirated with a bulb syringe and glass pipet, or a representative portion of the secretions there is removed with the opposite end of the tongue blade previously used. This material is then smeared on a second dry slide. Both slides increase the accuracy of diagnosis in general screening, since the cervical scraping smear is more accurate for carcinoma of the cervix and the vaginal pool smear more accurate for endometrial carcinoma.²

After preparation of these slides, they must be preserved and sent to the cytological laboratory. Each lab has its own technique and preference for this, but most widely used is fixation by immersion of the prepared slides in a 50% ether, 50% alcohol mixture for one hour. Immediate immersion of the prepared slides into the alcohol-ether mixture is important to preserve cellular detail. The slides are then air dried and sent to a cytology laboratory for evaluation and classification by a trained cytologist.

Classification

Papanicolaou's original classification was:^{5,6}

- Class I—no evidence of malignant neoplasm. No atypical cells.
- Class II—atypical cells present but no evidence of malignant neoplasm.
- Class III—cells present causing suspicion of malignant neoplasm.
- Class IV—fairly conclusive evidence of a malignant neoplasm.

Class V—Conclusive evidence of malignant neoplasm.

Now more widely used is a simplified classification.

Negative—Class I and II

Suspicious—Class III

Positive—Class IV and V

Indications

For screening purposes all adult females should be examined and smears prepared unless stenosis of the introitus prohibits examination. Any preselection of patients would defeat the purpose of a screening technique for the detection of sub-clinical and asymptomatic lesions. The younger patient who will be examined will be seen less frequently and hence justify the occasional examination. Normal adult females should be examined and screened at least yearly. Some physicians, however, recommend biannual examination after thirty-five or forty years of age.

These screening procedures should also be afforded the obstetrical patient since many of these patients are not seen by physicians except during their pregnancies. Cervical cytology in pregnant patients is as accurate as cytological studies in the non-pregnant patient.^{7,8} Likewise the incidence of carcinoma in situ and invasive cervical carcinoma is the same in pregnant and non-pregnant patients of the same age group.^{9,10} Hence, diagnostic investigation in pregnant patients should be conducted in a similar manner to that used in non-pregnant patients as will be later described. Failure to recognize these facts explains why cancer detection in pregnancy is delayed more often than in the non-pregnant patient.¹¹

Accuracy

Statistics are now available from large series of cancer screening programs covering over 600,000 women. The dominant cancer was found to be epidermoid cervical carcinoma, accounting for six cancers per 1000,

or one in every 167 women screened. The incidence of positive results for endometrial carcinoma averaged .8 per 1000 women, and the instance of other pelvic cancers so detected averaged .2 per 1000 women.²

Approximately 1% of all cervical and vaginal pool smears on patients screened for the first time will be Class III, IV, or V¹². Fifty percent of these patients with Class III smears will show cervical carcinoma, either in situ or invasive.¹³ Over 90 to 95% of patients with Class IV or V Papanicolaou smears will show carcinoma when proper tissue specimens are obtained by conization of the cervix and uterine curettage.¹¹ Hence, one out of every 100 patients examined for the first time by such smears will show significant abnormal smears and more than one out of every 200 patients examined will be proven to have uterine carcinoma on tissue examination.

Diagnosis of cervical carcinoma, pre-invasive or invasive is generally felt to be 90 to 95% accurate by cervical cytology (5-10% false negative reports).^{11,14} This accuracy rate is increased with repeated examinations and is as good or better than colpomicroscopic examination which is used more extensively outside the United States.¹⁵

Unfortunately, diagnosis of endometrial carcinoma by the cervical scraping and vaginal pool method of cytology is only approximately 60% accurate.² Hence, vaginal bleeding in older women with negative Pap smears necessitates curettage of the uterus to explain the abnormal bleeding.

The value of cervical cytology is best demonstrated in its ability to detect the first stages of cancer before there is any clinical suspicion of tissue change. In large series, 70 to 90% of cervical in situ lesions and 25 to 35% of invasive cervical carcinomas were unsuspected clinically.² Because of this high instance of failure to recognize, by inspection, early cervical carcinoma all patients prior to hysterectomy should have Papanicolaou smear studies and if suspicious or positive for malignancy, further diagnostic procedures, as later outlined, should be com-

pleted prior to the proposed hysterectomy. Otherwise a simple hysterectomy may be performed when more radical surgery or radiation therapy is actually indicated.

Most gynecologists can recall the patient with a normal appearing external cervix and vaginal bleeding who was found to have endocervical carcinoma leaving only a shell of normal appearing external cervix. This patient's prognosis is jeopardized when treated by simple hysterectomy and should be improved by proper therapy indicated by accurate diagnosis prior to surgery with Papanicolaou smear, curettage, and biopsy.

Diagnosis

These statistics then indicate that suspicious (Class III) or positive (Class IV and V) Papanicolaou smears mandate further diagnostic studies to prove or disprove cervical carcinoma. Definitive treatment should not be carried out on the basis of the smear alone. Adequate tissue for study is best obtained by conization with a scalpel, without cautery, prior to dilatation and curettage, generously removing all of the squamo-columnar junction and including approximately one and a half centimeters of the endocervical canal.^{16,17} Cervical punch biopsies result in: (1) limited sample, (2) critical area within the cervical canal not included, (3) fragmentation, (4) loss of surface epithelium through instrumental trauma or surface coagulation necrosis, (5) insufficient underlying stroma.¹⁶ Therefore, cervical punch biopsies should not replace cold knife conization for diagnostic purposes.

An early lesion may be present at one location on the cervix and the opposite side of the cervix may show no abnormality. Punch biopsies of such a cervix, therefore, may miss the significant lesion. If a punch cervical biopsy shows carcinoma in situ an adjacent area missed by biopsy may show invasive cervical carcinoma, hence conization again is necessary and will direct proper therapy which differs in in situ and invasive

lesions. Only an invasive carcinoma diagnosis by punch biopsy gives enough information to allow proper therapy without additional conization.

Papanicolaou smears in pregnancy, as before mentioned, should be handled in the same manner as described for the non-pregnant patient. Some authors report no complications from conization during pregnancy,^{7,19,20} but in one series of such conizations, one immature nonviable birth and one abortion probably resulted from conization of 26 patients, as well as some increase in blood loss and two threatened abortions.¹⁸ These risks, however, appear to be justified by the extreme importance of early cervical carcinoma diagnosed during pregnancy.^{10,21}

Class I or normal smears are reassuring to both the physician and patient. Such smears should be repeated at the usual time interval of examination, generally one year. Class II or atypical smears should be repeated at the cytologist's suggestion or if resulting from infection, the infection should be treated and the smear repeated after improvement of the infection. Repeated Class II Pap smears are frequently due to chronic cervical and endocervical infection and often are best handled by scalpel conization to insure accurate diagnosis and cure.

The ease of application, proven accuracy and practical value of Papanicolaou smears in early detection of cervical carcinoma has prompted Dr. Nicholson J. Eastman to state, "To do a satisfactory examination for early carcinoma of the cervix, a speculum, a good light and the unaided eye are no longer enough. It is necessary to also use cytology-and/or the colpomicroscope."²²

Summary

A review of the methods, indications, accuracy, and application of gynecological exfoliated cytology (Papanicolaou smears) is presented to encourage wider usage in all adult females for earlier cancer detection.

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Chemotherapy in Cancer Control

It seems to me that the incidence of neoplastic diseases will not likely decline of its own accord. Thus we may look ahead to the need for even greater efforts from all the disciplines of science before we can hope to reach this goal. The fact that chemistry will have an important role in this dramatic achievement is quite apparent. All of us interested in this approach to the problem must be increasingly aware of the varied contributions chemistry will make in solving the riddle of neoplastic growth and in treating its disease manifestations. It will be of benefit to our professions and to the goal we seek if all of us become as familiar as possible with current developments as chemistry assumes an ever more important place in achieving the complete control of cancer.—John R. Heller, M.D., President, Memorial Sloan-Kettering Cancer Center, in *The Percolator*, Feb.-March 1962.

Esophageal Surgery – Present Trends

Benign Lesions

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Several of the benign lesions of the esophagus can be successfully treated surgically without undue risk.

DURING the past fifteen year period great strides have been made in the treatment of the more common benign esophageal problems. With this fifteen year surgical experience, the indications for surgery, the safeguards to be applied during surgery, and the improvement in instruments, anesthesia, antibiotics, and preoperative evaluations have made esophageal surgery for benign lesions an acceptable modality of treatment.

This paper deals with the more common benign esophageal problems and their surgical repair, and does not pretend to describe the more esoteric esophageal lesions seen infrequently.

I. Pharyngo-Esophageal Diverticulum

This diverticulum is frequently seen in the elderly patient, especially the female, but may occur in either sex in the middle-aged. It starts as an outpouching or dimple in the posterior pharynx between the constrictor muscles and continues to enlarge in a downward and lateral direction until the bolus of food is forced initially into the diverticulum instead of into the esophagus proper. When this occurs the patient develops symptoms of regurgitation as well as frequent choking episodes. The possibility of aspiration of semisolid foods from this

pouch into the trachea during the sleeping hours is, in itself, an indication for surgery. The symptoms become progressively worse until an entire meal may be contained in the pouch and the patient is indeed suffering from inanition and choking sensations following each feeding.

A diagnosis is easily established from the history and confirmed by a Barium swallow demonstrating the existence of the pouch. (See Fig. 1.)

Surgical Repair—Surgical repair was initially done by Lahey^{1,2} in two stages—the first stage elevating the sac from its dependent position so that food would more readily enter the esophagus, and the second stage actually excising and closing the sac opening.

Currently, these diverticula can be removed easily at one stage through a small incision along the anterior border of the left sternocleidomastoid muscle.³ The lateral border of the thyroid is identified and elevated, the trachea identified and care taken to preserve the recurrent laryngeal nerve. The sac is usually apparent posterior to this point and with traction of the thyroid mesially the sac is elevated and carefully dissected down to its junction with the esophagus. Traction sutures are placed on each side of the esophagus and the sac removed. The muscularis is then closed with interrupted silk sutures. There being no serosa to the esophagus a third layer is not necessary. A small drain is left in place, the wound irrigated with saline solution, and, at the preference of the surgeon, a solution of penicillin and streptomycin can be gently dripped into the region and the wound closed in layers.

Clear liquids can be taken the first post-operative day, and a semi-solid diet is started on the fourth day.

Complications following this surgery are fistula through the esophageal closure with cervical mediastinitis requiring drainage. Also, if an excessive portion of the esophagus is removed with the neck of the sac it is possible that a stricture may occur. Both these complications are extremely rare and, it would seem, should not occur frequently.

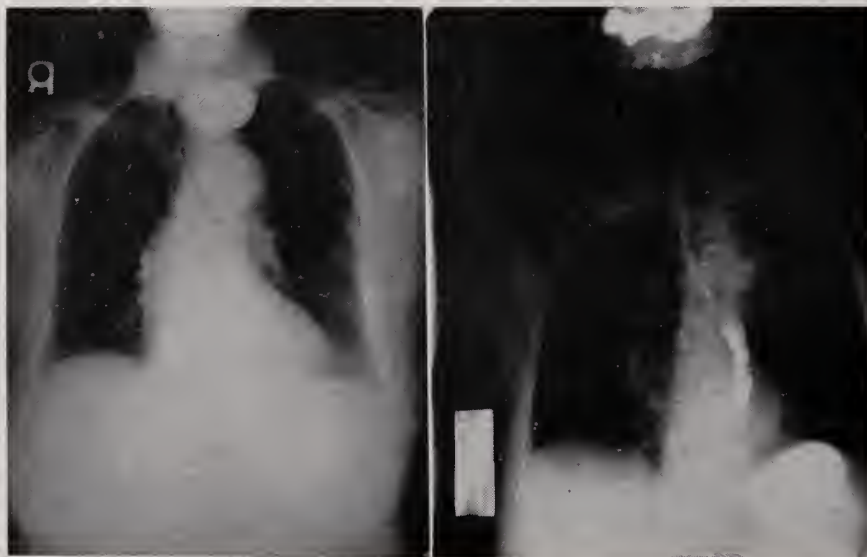


Fig 1. Pharyngo-esophageal diverticulum before and after resection. One stage resection is now safely performed.

II. Epiphrenic Esophageal Diverticula

The epiphrenic diverticulum is the next most frequent site of esophageal diverticula and occurs just above the diaphragm in the lower portion of the esophagus. Like the pharyngoesophageal diverticula, once the sac starts to enlarge, it does so progressively, resulting in regurgitation of foul smelling, bad tasting material several hours or days after a meal and causing significant substernal pain. Furthermore, the epiphrenic diverticulum is frequently associated with achalasia of the esophagus due to traction on the cardioesophageal junction with disruption of the normal valve mechanism at the cardia and resultant esophagitis. The possibility of rupture of such a diverticulum is rare but has occurred, thereby adding further to the indications for removal.⁴

The diagnosis depends upon the symptoms as well as a Barium swallow confirming the presence of an epiphrenic diverticulum. Indications for surgery are the existence of a sizable symptomatic lesion. In an elderly person with a small asymptomatic diverticulum surgical repair is not necessary.

Surgical Repair: The surgical excision of these lesions requires a small left posterolateral thoracotomy, identification of the diverticulum and elevation of the lower

portion of the esophagus. The neck of the diverticulum is carefully dissected free and the sac excised with a two-layer interrupted silk closure. This procedure is not difficult technically because the neck of the sac is usually narrow. Care is taken to leave a chest tube for drainage for several days following the surgery so that any accumulation of serum or infected material will be evacuated in this manner. Care is also taken to avoid iatrogenic stenosis of the esophagus by excessive removal of the neck of the sac.

Clear liquids are allowed the day following surgery but soft, semi-solid food are not started before the fourth postoperative day. A regular diet can be started approximately two weeks following surgery.

The results of this surgery are excellent

and are strongly to be advised in any patient who can medically accept surgery.

III. Esophageal Hiatal Herniae

There is no topic more widely discussed or that produces more controversy than the esophageal hiatal hernia. Many medical people feel that this can and should be handled medically with elevation of the head of the bed, antacids, etc. and that surgery is rarely, if ever, indicated. Some gen-

In a patient with possible abdominal disease such as cholelithiasis or perhaps a duodenal ulcer or other intra-abdominal lesion, repair certainly should be effected from below since perhaps a combined procedure can be done at the same time. There are, however, a large number of patients whose symptoms are directly related to the hiatal hernia and in whom repair can be more easily and safely facilitated through a thoracotomy incision. Probably the greater majority of patients



Fig. 2. Large epiphrenic diverticulum causing esophageal achalasia and regurgitation discomfort. Resection performed through left thoracotomy.

eral surgeons feel that all hiatal herniae should be repaired from below so that adequate abdominal exploration can be performed. Thoracic surgeons advise repair from above since it is easier technically and affords a more lasting and secure repair. Certainly all three advocates have some basis for their arguments but it would seem that a more reasonable approach should be applied by all. In an elderly patient who is relatively asymptomatic, repair of a hiatal hernia is not indicated. This indeed should be handled medically rather than surgically.



Fig. 3. Large hiatal hernia seen on lateral projection. Notice fluid level in hernia—actually air fluid level in stomach.

with hiatal hernia and solid indications for surgical repair should be done through the chest.

Indications—The hiatal hernia, whether it is paraesophageal or sliding in type produces destruction of the normal valve mechanism produced by the crura of the diaphragm, thereby destroying the valve mechanism at the cardia. Mr. Allison has shown repeatedly that the lower esophagus does not tolerate acid material well and that a continual bathing of this region with regurgitant

acid material produces esophagitis and symptoms directly related to this.^{5,6} Continual belching, substernal pain, acid eructations, "heartburn" with radiation to the back of the throat, regurgitation of food, cardiospasm with any hangup of large food particles (especially meat), etc. constitute the usual symptoms of a hiatal hernia. Occasionally esophagitis becomes so severe that bleeding will occur and can at times be massive. The pain is frequently confused with that of chronic cholelithiasis and cholecystitis or as coronary insufficiency. These other diseases can be ruled out by cholangiogram studies and electrocardiography, especially exercise tolerance tests. A careful history indicating the absence of substernal pain following exercise tends to rule out significant coronary disease. On the other hand, early morning heartburn is characteristic of hiatal hernias where regurgitation and esophagitis exists and indeed occurs at complete bed rest, unlike coronary pain. The indications for repair, therefore, depend upon the severity of the symptoms. Occasional attacks of heartburn with a proven hiatal hernia do not warrant surgery. These frequently can be controlled by antacids, the drinking of warm milk or tea, elevation of the head of the bed, etc. However, if symptoms persist or recur with great frequency, or if bleeding has occurred then surgical repair is indicated.

It seems to this author that a symptomatic hiatal hernia should be considered for surgical repair much as in any other persistent herniation, since there is no evidence that these become progressively better by themselves. The anatomical defect responsible for the hernia is a mechanical one and cannot be cured by posture and medication alone. The surgical repair is technically not difficult, carries an extremely low mortality and morbidity rate, and where indications exist provides marked and permanent relief of symptoms.

Esophagoscopy is important to rule out the presence of esophageal lesions, either varices or tumor, where bleeding has oc-

curred. Also, if a small hiatal hernia exists, esophagoscopy can definitely determine whether or not regurgitation occurs. The scope is placed just above the cardia and the patient instructed to strain. If regurgitation of gastric material occurs as visualized through the esophagoscope, one can definitely presume the existence of an inefficient valve.

Surgical Repair—Surgical repair is best afforded through the bed of the eighth rib, in a posterolateral thoracotomy incision. The distal esophagus is elevated and a tape passed around it. A small counter incision is made in the diaphragm and the surgeon's hand passed through this and into the hiatus—clearly demonstrating the so-called phreno-esophageal ligament. This ligament is incised anteriorly and the esophageal tape passed through the opening and brought out through the counter diaphragmatic opening. With elevation of the tape the crura are easily identified either by palpation or visually, and several heavy braided silk sutures are taken approximating these crura. Care is taken not to close the hiatus snugly and if the forefinger of the surgeon can be passed through the opening following the repair, this is considered an adequate passage. The proximal end of the phreno-esophageal ligament is then sutured to the under surface of the diaphragm with interrupted silk sutures and diaphragmatic closure is effected using an imbricating suture of interrupted silk. A single layer closure with silk or catgut is not sufficient since reports of post-operative herniation through the diaphragm are noted from time to time. A chest tube is placed in the posterolateral position for several days. It is not necessary to pass a nasogastric tube.

Convalescence is usually benign, although patients occasionally develop gastric dilatation due to aerophagia and the inability to evacuate this air by eructation.

A semi-soft and liquid diet is advised for approximately ten days to two weeks following which a regular diet can be instituted.

IV. Traumatic Diaphragmatic Hernia

Although frequently described, a true traumatic diaphragmatic hernia is relatively rare. This usually can be pinpointed to an automobile accident or crushing injury. Frequently the diagnosis of traumatic hernia is not made for several months or several years

of breath, chest pain, etc. Herniation through the right diaphragm is somewhat less common than through the left since the liver acts as a blocking agent to prevent the intestine or colon from entering a tear in this region. Figure 5 demonstrates the x-rays pre- and postoperatively on a patient

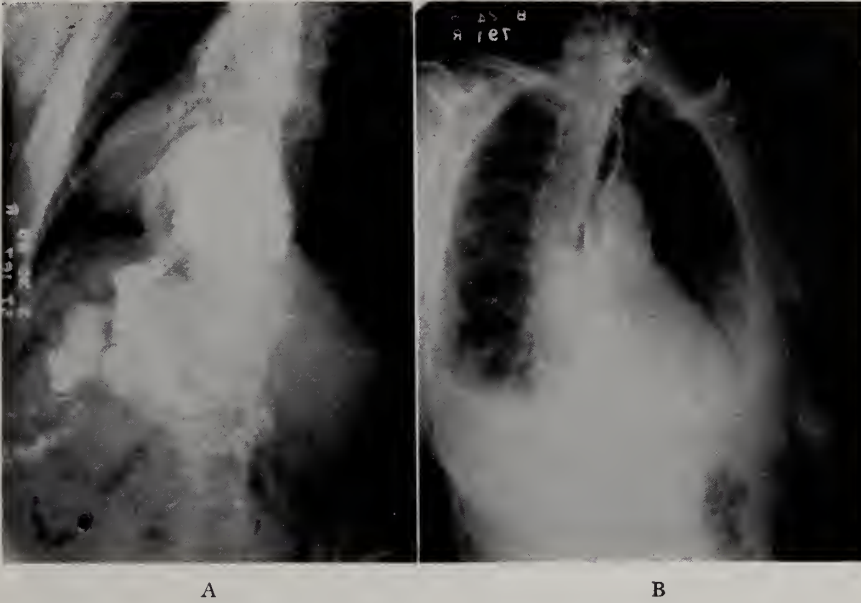


Fig. 4. A. Large hiatal hernia—sliding type—with most of stomach above diaphragm. B. Barium swallow showing hiatal hernia repair—no stomach above diaphragms.

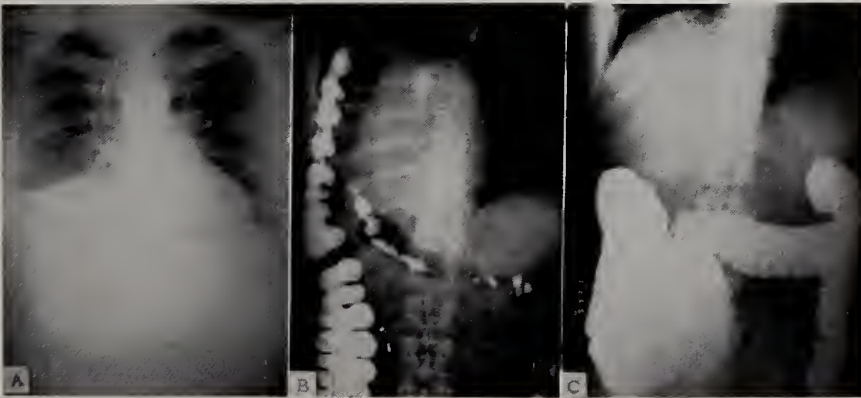


Fig. 5. A, B—Large, traumatic right diaphragmatic hernia with part of liver, ascending and transverse colon in right chest. C—Postoperative x-ray showing colon back in normal position.

following the accident itself. Once a portion of the bowel, usually colon, enters the hernia it progressively works its way through the opening with symptoms then due either to partial bowel obstruction or to compression of normal lung parenchyma, shortness

with a large traumatic tear of the right diaphragm who presented several years following his injury with most of the transverse and ascending colon in the right chest. This patient suffered from extreme shortness of breath and marked chest pain. The

postoperative repair demonstrates the colon in the normal position.

Diagnosis depends upon a history of trauma and the symptoms of chest pain, shortness of breath or intestinal complaints—obstipation, frank obstruction, intermittent colicky pains, etc. The chest x-ray will frequently not reveal the herniated bowel, although the diaphragm usually is markedly elevated and usually immobile. Appropriate G.I. x-rays, upper G.I., barium enema, etc. will demonstrate the herniated portion of bowel. Auscultatory examination of the

colon mesh patch can be used. The so-called "right of domain" rule applies here as with any other large hernia, and returning a large amount of bowel to the abdomen may cause an increase in intra-abdominal pressure, ileus and elevation of the diaphragms so that poor diaphragmatic excursion and basilar atelectasis will occur. Precautions should be taken to guard against this with persistent use of a nasogastric tube, intravenous fluids until adequate bowel sounds and colon evacuation occur spontaneously, frequent endotracheal aspiration or cough-

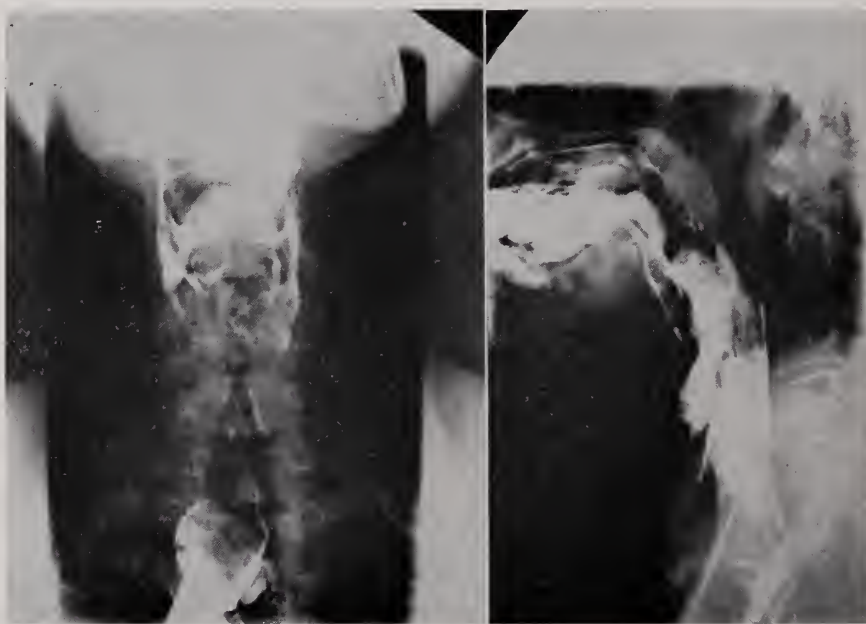


Fig. 6. Esophageal polyp suggested on barium swallow and proven at the time of esophagoscopy. Successful excision performed through a cervical incision.

chest frequently demonstrates dullness over the base as well as unusual bowel sounds in this region.

Surgical Repair—Surgical repair is effected through a thoracotomy incision. A laparotomy incision usually is not required. The intestinal contents are identified in the chest, and the edges of the hernia are dissected free where they may be stuck or adherent to the bowel. The intestine is then gently placed back in the abdominal cavity and after developing a clean-edged diaphragmatic opening, the primary repair with an imbricating suture of interrupted silk is performed. A prosthesis such as Tef-

ing if atelectasis threatens, broadspectrum intramuscular antibiotics to prevent infection, etc. The chest tube is placed in the posterolateral position and left for several days for removal of exudates which invariably form.

There should be no difficulty if correct preoperative evaluation, careful surgery, and especially careful postoperative care are used.

V. Esophageal Polyps

Occurrence of esophageal polyps is relatively unusual but should always be considered in the differential diagnosis of esoph-

ageal problems especially where frequent episodes of choking and dysphagia occur. Figure VI demonstrates an esophageal polyp in the lower cervical region which on numerous occasions was regurgitated into the pharynx causing choking and partial laryngeal obstruction. This polyp was demonstrated at the time of esophagoscopy and also barium swallow, and excised through a small esophagotomy incision with the base of the polyp carefully sutured. This procedure is performed through a small incision, either a cervical incision if the polyp is high in the neck; a right upper thoracotomy incision if the lesion is at the level of the aortic arch, and through a left thoracotomy incision if the polyp occurs in the lower third of the esophagus. Surgical repair is technically easy and there should be no complications postoperatively.

VI. Achalasia

This condition describes the persistent esophagitis due to regurgitation of acid material from the stomach, resultant hyperplasia of the mucosa and enlargement of the proximal esophagus above the cardia. There, perhaps, is no condition of the upper G.I. tract which is more resistant to therapy than this particular disease and, in certain instances, more rewarding to the surgeon when adequate repair is effected. The term achalasia refers to the condition of the esophagus and not to the primary difficulty causing it.⁷ Achalasia may be due to a congenital absence of submucosal nerve plexuses resulting in improper propulsion of the food bolus. This condition is comparable to Hirschsprung's disease or megacolon. Another underlying condition may be the existence of a tight band or circular muscles at the cardia as in the pyloric stenosis of infancy producing an obstruction with proximal esophageal dilatation. In general, this condition is diagnosed in the younger aged group, first, second and third decades of life, whereas achalasia produced following the absence of myenteric plexuses may be diagnosed later. These two conditions

having been differentiated, the treatment is correspondingly specific and different for each and will be mentioned.⁸ Diagnosis depends upon history, age of the patient, Barium swallow, and esophagoscopy. Demonstration of a tortuous, dilated esophagus in a relatively young person and the endoscopic evaluation revealing no evidence of stricture or obstructing stenosis would indicate a hypertrophic muscle band best repaired with the Heller or cardiomyotomy procedure. On the other hand, a tortuous esophagus in the middle or early age group with a long history of regurgitation, etc., would make one suspect an absence of nerve supply in this region once other lesions such as carcinoma or structure above a hiatus hernia had been ruled out. In general, acute obstructing lesions of the esophagus such as carcinoma do not develop proximal esophageal dilatation since mechanical distention does not have time to occur. Repair of a patulous dilated esophagus with absent peristaltic propulsion can at times be treated with a Heller procedure but can best be treated by distal esophagectomy and anastomosis of the stomach to the lower esophagus just below the aortic arch. The mucosa of the distal esophagus does not withstand the effects of acid regurgitation well, and unless the entire lower third is removed peptic esophagitis will follow.

Surgical Repair—1. Heller Procedure—cardiomyotomy. Many surgical procedures have been devised but none more definitively curative than the Heller procedure or cardiomyotomy.⁹ A thoracotomy through the bed of the eighth rib is performed, the distal esophagus is elevated around a tape and by gently dilating the hiatus with the fingertip a small segment of the upper stomach can be drawn through the hiatus. An incision is then made through the serosa of the stomach and through the muscular layers of the esophagus until the mucosa is identified. A blunt-nosed clamp is then used to gently spread these muscle fibers until the gastric and esophageal mucosa bulges through the defect. Care is taken

not to cut or tear the mucosa but if this is done several interrupted sutures of fine silk can be used to close the defect. It is important to make an adequate incision through the hypertrophied muscle fibers and this usually requires an area an inch above and below the actual obstructing point. Once this is performed a chest tube is placed for drainage and the thoracotomy closed. Semisolid foods can be taken almost immediately and a regular diet started in about eight days.

2. Repair of achalasia due to the absence of nerve elements in the lower esophagus with marked patulence and dilatation of the proximal esophagus is best effected by a distal esophagectomy and esophagogastrotomy. This procedure is also performed through an eighth rib left posterolateral incision and at this time the distal esophagus

technique. The diaphragm is then loosely approximated to the stomach and the lateral wall of the stomach is loosely approximated to the parietal pleura. A chest tube is placed into position for drainage. A nasogastric tube is also used to keep the stomach well decompressed for three or four days.

With the distal esophagectomy and esophagogastrotomy both vagi are tied and divided and it should be remembered that a pyloroplasty is beneficial following this procedure. Since vagectomy causes rather slow gastric emptying, a pyloroplasty or emptying procedure will prevent marked gastric dilatation and regurgitation postoperatively.

Both these procedures, if performed carefully, can be done with ease and with a low mortality rate. The morbidity is also acceptable and relates mostly to incisional pain rather than to G.I. disturbances.

	No. Cases	Average Age	Surgical Mortality	1-year Follow-up
Pharyngo-esophageal diverticulum	8	67	0	good
Epiphrenic esophageal diverticulum	3	69	0	good
Esophageal hiatal hernia (sliding-type) (93 cases of hiatal hernia seen and evaluated with 54 repaired surgically)	54	56	2	good
Traumatic diaphragmatic hernia	3	44	0	good
Esophageal polyps	2	41	0	good
Achalasia (Heller procedure 6 Esophagogastrectomy 2)	8	37	0	good

is elevated, the diaphragm opened down to the stomach and the stomach gently lifted from its bed with great care to carefully ligate the left gastric artery. A small cuff of upper stomach as well as the distal third of the esophagus is then excised, the proximal esophagus below the aortic arch is then anastomosed to the stomach which is mobilized with great care to avoid clamping or injury to the gastroepiploic arch. It is essentially the latter vessels which supply arterial blood to the stomach and this vessel is easily damaged unless care is taken. After closure of the upper portion of the stomach a small circular incision is made just below this closure on the anterior surface of the stomach, the plug of gastric wall removed and an anastomosis effected to the distal esophagus using a two-layer interrupted fine silk

Summary

A number of the more common benign esophageal problems which can be corrected surgically have been presented with no effort to discuss the more infrequent lesions.

Stress is made on the correct diagnosis and attempt at medical control of benign esophageal lesions where regurgitation of gastric acid material and minor complaints exist. However, when other forms of therapy have not significantly benefited the patient this author feels that correct surgical repair is indicated.

Benign esophageal tumors are not mentioned here nor is the esophageal stricture due either to postoperative complications or to the swallowing of foreign bodies, especially lye with secondary cicatrix and ob-

struction. Esophageal strictures of any significance that do not respond well to simple dilatations are in themselves a complicated problem requiring major resection and substitution of either stomach or roux-en-y loops of intestine. This subject is, by its nature, fairly extensive and is therefore not mentioned in this paper.

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False Vocal Cords Can Cause Hoarseness

Speaking with the false vocal cords is a common cause of hoarseness, according to Dr. Herbert L. Fred, Baylor University College of Medicine, Houston.

The vocal cords, two small bands of tissue, are made up of the false cords and the true cords, which are normally used for speaking. The false cords lie above the true cords in the larynx, or voice box.

Using the false cords for speaking makes the voice much lower than normal with a small range of pitch, Dr. Fred wrote in the October Archives of Internal Medicine, published by the American Medical Association.

In typical cases, hoarseness varies in severity and often is worse at the end of the day. Intermittent loss of voice, voice-cracking, a feeling of tiredness in the throat, fear of speaking, and persistent attempts to clear the throat are other frequent symptoms.

The possible cause of the condition include psychological stress, abuse of the voice, and disease of the larynx, but in many cases the cause cannot be found.

Speech therapy is useful and helps some patients to regain and maintain normal speech, but others do not respond to any form of treatment.

A Broad Ranged Antihypertensive Combination (Ser-Ap-Es)

*The author reports good results
in the treatment of hypertension
with this combination of drugs.*

DESPITE THE INTRODUCTION of many new antihypertensives for the various grades of essential hypertension in the past decade, treatment procedure has become complicated and intensified rather than simplified. Physicians have often commented on the confusion which has arisen among patients who are required to take a variety of dissimilar antihypertensive compounds at various intervals during the day. The need for a single tablet—possibly a combination of several of today's most effective antihypertensives—for simplified therapy is great. Despite the fact that combination drugs are frowned upon by the profession—and in most cases, I would agree—essential hypertension does range through a broad spectrum of mild, moderate and severe forms which overlap each other. Under such circumstances, a combination tablet of drugs which would affect almost all hypertensive levels would be a logical answer to this problem and would be most welcome. Moreover, such a preparation would also eliminate the risk of uncontrolled blood pressures or even drug failures which so many physicians encounter while determining or selecting the appropriate drugs for their hypertensive patients.

Current thinking concerned with antihypertensive therapy seems to concur with this opinion on the use of a combination of drugs rather than one agent. According to

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Wilkins,¹ "Certainly combinations of hypotensive drugs are more active than any one drug used alone. If you are going to be a purist and say, I will use only this, or only that', you will not get nearly as good results as if you bend a little and say, I will use Drug No. 2 if No. 1 doesn't work. I'll even add two or three drugs together' . . ."

Smirk² agrees by noting, "Our general impression is that at the present time the best results are to be obtained by the use of suitable combinations of hypotensive agents."

In the course of this review, we learned of a combination of reserpine, hydralazine, and hydrochlorothiazide in one tablet* which was purported to have the broad level of effectiveness of all three preparations with lessened by-effects and reduced dosages of each.

Results from earlier clinical work with these agents given as separate entities but in combination with each other had often pointed to the medical logic of this one-tablet possibility in all hypertension except possibly the very mildest and the most severe forms.

Grissom³ had noted in his work on hypertension that ". . . the mainstays for the treatment of hypertension are reserpine, hydralazine, and the 'thiazides', with mecamylamine, and possibly guanethidine, useful in the more severely hypertensive patients."

In 1961 Hoobler and Conway⁴ outlined the use of thiazide derivatives, reserpine and hydralazine in the treatment of the milder forms of hypertension. They particularly noted that mortality statistics indicate that

*Supplied as Ser-Ap-Es by CIBA Pharmaceutical Company, Summit, New Jersey.

all elevations in blood pressure above normal are associated with increased mortality rates.

Moreover, a preliminary report by Clark and Kaplan⁵ indicates that good control of diastolic blood pressure may prevent some of the more serious renal, cardiac and cerebral complications of untreated hypertension, such as encephalopathy and cerebral vascular accidents. Renal insufficiency, particularly, is one of the most deleterious deterrents for effective therapy. Therefore, any patient who exhibits an increase in blood pressure above the accepted normal values of 150/90 mm. Hg should be treated before symptoms of vascular or renal complications occur. Hoobler and Conway⁴ utilized the thiazides to initiate therapy and to serve as background therapy to potentiate the action of all other antihypertensive agents. Reserpine was added to enhance the antihypertensive effectiveness of the diuretic. If the blood pressure was still not well controlled, hydralazine was added to the other two drugs. They particularly noted that the three drugs are "continuously effective, are often tolerated for long periods of time without side effects, and so do not in general produce serious physiologic or hemodynamic disturbances." These investigators emphasized that hydralazine presents two important antihypertensive properties, ". . . a greater effect on the diastolic pressure than most commonly accepted antihypertensive drugs and has a unique mode of action in that it seems to promote peripheral arteriolar dilatation."

Also commenting on hydralazine, Taylor, Dustan, Corcoran, and Page⁶ found that "the remission of hematuria and proteinuria and, in some patients, increases of renal blood flow, testify to the cessation of nephrosclerotic activity in the good response groups." Adding to these antihypertensive "plusses", another investigator, Moyer⁷ observes that hydralazine "is active with the patient in the supine as well as in the erect position, and it is effective in the treatment of both mild and severe diastolic blood pressure elevation."

The incidence of side effects (nasal stuffiness, depression, "hydralazine syndrome") is also significantly reduced by the use of these three agents simultaneously, since effective dosage of each drug is reduced to a minimum. According to Dupler, Greenwood and Connell,⁸ "when low doses of hydralazine are added to reserpine plus hydrochlorothiazide, these side effects rarely occur."

This reduction in side effects adds to the possibility of bringing more hypertensive patients under adequate control with relatively safe, effective therapy. The use of this combination of reserpine, hydralazine and hydrochlorothiazide also indicates that these three agents might well serve to prevent the deleterious action of hypertension through their protecting effects on the three vital organs: (1) kidney: hydralazine increases renal blood flow and may improve kidney function. (2) heart: reserpine prolongs diastole allowing more time for the myocardium to rest. (3) cerebrum: hydralazine maintains cerebral blood flow at the same time that it reduces cerebral vascular resistance.⁹

Since earlier clinical work noted the value of this drug combination, we decided to conduct a clinical trial of the combination in a single tablet (0.1 mg. of reserpine, 25 mg. of hydralazine, and 15 mg. of hydrochlorothiazide).

Material and Method

A group of 74 patients with mild to moderate essential hypertension was followed for periods of four to 37 weeks. These individuals were seen in our private office practice. There were 28 males and 46 females whose ages ranged from 39 to 79 years.

The average starting dose of the reserpine-hydralazine-hydrochlorothiazide combination was three tablets daily. In some cases it was possible to reduce the dosage after satisfactory control of blood pressure was obtained. The average maintenance dose was two tablets daily.

Results

The diastolic pressure was reduced to 90 mm. Hg or less in a total of 62 patients (84 per cent). In our opinion this was a good response. For the entire series of cases, the average blood pressure was reduced from 175/100 mm. Hg to 148/85 mm. Hg as depicted in Figure 1.

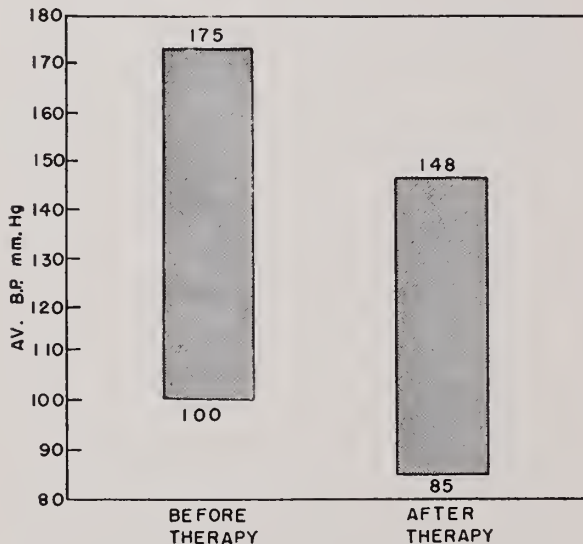


FIGURE 1 Average Blood Pressure Reduction in 74 Hypertensive Patients on Reserpine-Hydralazine-Hydrochlorothiazide (Ser-Ap-Es)

Only 14 of the 74 patients experienced any side effects. Side effects included nasal stuffiness, headache, dizziness, nightmares, nausea, and nervousness. Headache, which was the most frequent complaint, disappeared with time or on reduction of dosage; however, the drug had to be discontinued in three cases because of severe headaches not amenable to aspirin or antihistamines. These patients were changed to Esidrix-Serpasil and did not develop headaches.

Summary and Conclusions

A clinical trial of a new antihypertensive tablet containing 0.1 mg. of reserpine, 25

mg. of hydralazine, and 15 mg. of hydrochlorothiazide was evaluated in 74 patients with essential hypertension. A good response (diastolic reduction to 90 mm. Hg or less) was obtained in 62 (84 per cent) of the 74 patients with the combination. This coincides with Moyer's findings that 81 per cent of all patients will respond favorably to a combination of a rauwolfia, hydralazine, and a thiazide.

An average blood pressure reduction response from 175/100 mm. Hg to 148/85 mm. Hg was achieved in the entire series.

Suggestive indications from our results and other clinical data in the literature point to the fact that the early and more general use of a combination tablet of this type which is effective at several grades of hypertension (mild, moderate, moderately severe) may well serve to prevent the later, more serious renal, cardiac and cerebral complications often seen in untreated hypertensives.

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Report on the National Congress on Mental Illness and Health

After many months of careful planning by experts in the field of mental health, an event of first magnitude occurred during the period of October 4-6, 1962. It is the opinion of many that by convening the first National Congress on Mental Illness and Health, sponsored by the American Medical Association, this great organization of physicians in all fields of medicine gave recognition that it now considers mental illness to be the number one health problem in this country. This means that the many impressive resources of the American Medical Association will join hands with many other organizations and move into what is hoped to be a continuing assault on the huge problems that have been present for many years in combating this number one health problem. It is very obvious from the outset that even with this great organization added to the present army of workers now dedicated to combating mental illness there will not be any quick and ready solution. It does mean, however, that all branches of medicine and medical education, of hospital administration and practices of public health programming and of public health education in medical subjects will be increasingly oriented toward the problem of mental health. It means that on the county and state levels the medical societies which in the past have probably restricted themselves to policy-making and advisory roles are now being instructed by the national organization to assume action and problem-solving roles in cooperation

SAUNDERS, JOHN R., M.D., *Chairman of Committee on Mental Health.*

Approved for publication by Commissioner, Department Mental Hygiene and Hospitals.

JOHN R. SAUNDERS, M.D.

with private and public citizens' organizations. This latest move by the American Medical Association will be most heartening to the other groups and organizations which have been attempting to hold the wall against the ever increasing demand that additional services be provided for the mentally ill.

More than 2000 persons attended the first National Congress on Mental Illness and Health held in Chicago, October 4-6, 1962. Fifteen from the State of Virginia were in attendance. Prior to the meeting, it was decided that those from Virginia attending the meeting would form a Steering Committee to implement in Virginia the findings of the Congress. It is to be noted that the agenda of the program of the first National Congress on Mental Illness and Health contained the following topics:

There were topical conferences on the Physician and Community Needs, the Medical Profession and Mental Health Services in the Community, the Mentally Retarded, Juvenile Delinquency, the Family in Mental Illness and Health, the Aged, Rehabilitation, Alcoholism, Sociopaths, Sex Psychopaths, Psychopathic Deviated Offenders, Hospital and Other Medical Care Programs, Education of the Public, Education of the Physician in Mental Health, Personnel Problems in Mental Health, and Financing Mental Health Programs.

Recommendations were formulated at the topical conferences and the state and regional delegates then met to determine how the program could best be implemented in each state and region. Virginia was grouped with Maryland and the District of Columbia to discuss problems common to this region and make recommendations as how the states in this region could work together to imple-

ment the recommendations made by the Congress. The delegation from Virginia also met separately from the regional meeting just mentioned and the following items were felt by all present to demand immediate attention in order to implement a satisfactory program of mental health in Virginia:

1. COMMUNICATING MENTAL HEALTH KNOWLEDGE

- (a) To provide opportunities for physicians in general practice and specialists to increase their knowledge of mental illness and improve their techniques in treating it. The emphasis to be on psychosomatic and and psychoneurotic conditions.
- (b) To provide educational opportunities for paramedical groups such as social workers, nurses and others.
- (c) To encourage and assist volunteer organizations, such as the Virginia Association for Mental Health and the Virginia Association for Retarded Children, in a broad program of education of the general public

with special emphasis on key groups such as parents, teachers, clergy, police and leaders of business and industry.

- 2. PROVIDING IMPROVED SERVICES FOR HOSPITALIZED PATIENTS THROUGH
 - (a) Legislative activity
 - (b) Enlistment of manpower
 - (c) Increased financial support
 - (d) Volunteer assistance
- 3. ENCOURAGING THE DEVELOPMENT OF A COORDINATED, STATEWIDE PROGRAM OF AFTERCARE AND REHABILITATION
- 4. SEEKING ADEQUATE STATEWIDE INSURANCE COVERAGE OF MENTAL ILLNESS
- 5. WORKING FOR IMPROVED SERVICES FOR CHILDREN, BOTH THE EMOTIONALLY DISTURBED AND THE MENTALLY RETARDED.
- 6. EXPLORING THE POSSIBILITY OF DEVELOPING NURSING HOMES FOR THE CARE OF THE MENTALLY ILL
- 7. DEVELOPING A SPEAKERS BUREAU OF ADEQUATELY PREPARED PERSONS AND PROVIDING FOR ITS EFFECTIVE USE

Study of Chronic Myelogenous Leukemia.

The cooperation of physicians is requested on a study of chronic myelogenous leukemia being conducted by the Chemotherapy Service of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

Referrals of patients with chronic myelogenous leukemia are needed. Particularly needed are those in the 20 to 40 year age group with high white blood cell counts

and platelet counts, for studies of newer chemotherapeutic agents and as a source of white cells and platelets for *in vitro* and *in vivo* study.

Physicians who wish to have their patients considered for the study may write or telephone Dr. Paul P. Carbone, Chemotherapy Service, Medicine Branch, National Cancer Institute, Bethesda 14, Maryland, Telephone 496-4251.

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Self-Imposed Diets as a Public Health Problem

It would be difficult to estimate the number of people who, at some time or another during their lives, have undertaken a self-imposed diet. Such a diet, without medical direction, can sometimes cause serious harm, as the average individual does not have the proper knowledge of foods and their chemistry or the ability to evaluate his own state of health in order to reduce his weight safely.

During recent years the American public has become increasingly aware of the dangers of being overweight. In this sense, health education has achieved a measure of success. Now, however, secondary problems have arisen from individual attempts to combat the health hazards inherent in obesity.

In their eagerness to lose weight, many persons have tried the so-called easy and painless methods. Within the past five years, innumerable fads and fallacies have been circulated for this express purpose, and patent medicines, claiming miraculous results, have flooded the market. Today, remedies sold to effect weight reduction are the most profitable form of medical quackery. For the most part, these quick cures for overweight are not only worthless but even may be harmful to the person who succumbs to their false promises.

A further complication of the problem is the current interest in reduction of fat consumption in the diet. Alert, health-minded citizens have been quick to change their food intake patterns after reading reports which link heart attacks with blood cholesterol levels. However, the alteration of diet due to fear of cholesterol as one of the causes of heart attacks is still much debated in medical circles.

With the flood of diet information now being published in every type of news media and with the often conflicting reports from the medical profession, it is understandable that considerable confusion exists in the public's mind concerning the role of diet in maintaining optimum health.

In order to lose weight the healthy way, a person must take in fewer calories than usual, thus forcing the body to use its stored fat. A sound reducing diet is one which supplies all of the necessary foods needed to maintain health, brings about a gradual loss of weight, and corrects faulty food habits. This is achieved by including the Basic Four Food Groups into the diet each day, with consideration of limited energy foodstuffs, as fats and carbohydrates. The public must be made aware of the fact, however, that the important first step in any reducing plan is a physical examination by a physician.

To encourage overweight persons to reduce, the Virginia State Department of Health has used the group theory method in several areas of the State with moderate success. It is recognized that diet, in itself, will prove worthless unless the patient has some motivation for losing weight and has the capacity for self-discipline, of patience, and perseverance. The group approach meets these requirements, as it gives the participants the opportunity, usually at weekly intervals, to share and to discuss with one another their problems of losing weight and to provide each other with encouragement and support.

This program began about twelve years ago in Alexandria where the local health department sponsored clinics for women who wished to reduce to their ideal weight.

The Alexandria program has run almost continuously since that time. In addition, programs have been initiated in over sixty counties and communities, many through local home demonstration clubs, which are sponsored by the Agricultural Extension Service of the Virginia Polytechnic Institute. Before enrollment, each participant is seen by her physician, who recommends the amount of weight to be lost. The Nutrition Section of the State Health Department provides technical information, literature, personnel, and meeting rooms.

Healthy living through proper diet is now a major concern of the American public. The Virginia State Department of Health, through its Bureau of Health Education and Section on Nutrition, will continue to help

meet this concern for the citizens of Virginia by making available proper educational materials and by locally-sponsored programs on weight reduction where requested.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE
DISEASE CONTROL

	Nov. 1962	Nov. 1961	Jan.- Nov. 1962	Jan.- Nov. 1961
Brucellosis	0	0	13	17
Diphtheria	1	0	14	11
Hepatitis	59	132	1093	1412
Measles	84	139	9393	11886
Meningococcal Infections	9	2	68	40
Aseptic Meningitis	3	8	45	84
Poliomyelitis	0	2	9	12
Rabies (In Animals)	12	7	132	183
Rocky Mt. Spotted Fever	0	1	45	49
Streptococcal Infections	589	370	10951	5711
Tularemia	1	0	14	17
Typhoid Fever	5	1	20	21

Heart Can Double Rate

The maximum rate at which the heart can function well is about 180 beats per minute, compared with the normal rate of 70 to 80. Dr. George E. Burch, Tulane University School of Medicine, New Orleans, drew this conclusion from a study of the "little understood" mechanisms whereby heart rate increases smoothly when a normal person exercises, increasing his metabolic rate and need for blood.

In a report in the October 27th Journal of the American Medical Association, Dr. Burch said his investigations indicate the primary result of a rapid heart rate is a shorter rest period for the heart between contractions. The rapid beat causes the heart to pump smaller and more frequent spurts of blood than it does normally. This would indicate that heart difficulties following a sustained and exclusively rapid beat (more than 100 beats per minute) would result not from work and power output per stroke but rather from the "fatigue" developing from shorter rest periods. This reduced rest period would become more important in the presence of heart disease.

Normally, in the heart's contraction-relaxation cycle, the rest period is longer. At a rate of 60 beats per minute, the heart's external work makes up 32 per cent of the cardiac cycle. At 180 beats, the rest period becomes very short and at 240 beats the rest period is so short that the hearts is in contraction most of the time.

"Nevertheless, this phenomenon of pumping small, frequent spurts of blood seems to be necessary and seems . . . to be physiologically sound within limits, at least up to a rate of 180 beats per minute for man."

It is well known that the diseased heart increases its rate earlier and to a greater degree than the normal heart to meet an increased demand for blood. The normal heart can meet the greater needs for blood with a slower rate and greater output per stroke.

"It is most likely because only small, short spurts of work are performed with each heart beat at high cardiac rates that a great deal of work can be performed over a relatively long period of time without fatigue. However, the efficiency of the heart in meeting great demands for blood by many, small outputs of work is unknown."

Hypertrophic Pyloric Stenosis

Dear Sir:

I would like to take vigorous exception to the statements quoted and approved by Dr. Christian V. Cimmino in the November Virginia Medical Monthly, namely "X-ray examination (in hypertrophic pyloric stenosis) is absolutely necessary contrary to the practices of certain Anglo-Saxon countries" and "examination for palpable or non-palpable tumor is completely unnecessary, unreliable, time consuming for the physician and unpleasant for the patient".

Shades of William Osler! Has diagnosis in non "Anglo-Saxon" countries so succumbed to the machine age that the physician is not only not needed, but is actually a nuisance to the poor little three week old infant lying annoyed in his crib? Dr. Cimmino writes that the "validity of (those) statements must be accepted". Indeed it must not! Any self respecting red blooded "Anglo-Saxon" physician can make the diagnosis of hypertrophic pyloric stenosis in well over 90% of all cases if he will take a careful history, and then sit down and feed the baby to observe the typical waves and the projectile vomiting. With a little experience and patience, he can readily palpate the tumor in practically every instance.

Time consuming? Of course, but when has the "laying on of hands" not been a time consuming procedure, albeit a rewarding one to both patient and physician? Dr. Robert Gross, another of us "Anglo-Saxons", in his text book, "Surgery of Infancy and Childhood", states that in his experience with over 700 cases of proved hypertrophic pyloric stenosis, x-ray was necessary in only 1 out of 18 or 20 cases. No, I am very much afraid it is the routine use of x-ray and fluoroscopy in diagnosing hypertrophic py-

loric stenosis which must be considered the unnecessary diagnostic procedure.

I hope that Dr. Cimmino will return to the "Anglo-Saxon" fold and join me in making one last plea for the continued use of those diagnostic tools with which all of us are endowed—our ears, eyes and hands.

Very sincerely yours,
H. WILLIAM FINK, M.D.

November 19, 1962
Norfolk, Virginia

Dear Sir:

I should much rather evoke William Osler's shade than Andrew Still's.

Can Doctor Fink honestly say that he has never shortened even one little bit the routine of "ears, eyes and hands" in examining the squeaky chest of a coughing child, or the tender limb of an injured child, largely for expediency and even for the welfare of the patient, knowing full well the capabilities of the big machine down the cellar? (Any such shortcuts are all the more noteworthy, because in certain clinical situations, such as in some fractures, the masterful clinical examination is more reliable than the radiologic.)

Until such time as the millennium of equaling the success of the olive-feelers from Boston (and Norfolk) is reached, *properly* used radiology must remain the easiest and surest and safest way for us lesser mortals to make the diagnosing of congenital hypertrophic pyloric stenosis. The majority of the references studied in preparing my paper (such as the one reporting an 18% error when clinical examination alone was used), re-enforced by a fourteen year personal experience in a small-community hospital indicates to me that this is so. How else would my referring three certified pediatri-

cians and three certified surgeons have ever given me, a radiologist, enough material to form any opinion at all?

It may soothe any fancied hurt to one's clinical acumen in resorting to the roentgen method if he regards the latter as a very special pair of eyeglasses that allows an extension of his eyes into another segment of the electromagnetic spectrum (and requiring just as much skill in making observations as with his unaided eyes). He should no more shy away from the roentgen method than from his bifocals. Please Doctor Fink, don't reduce this cant of "eyes, ears and hands" to a *bromide*.

As one "Anglo-Saxon" physician to another, Doctor Fink, may I suggest that we free our parochial selves of our tethers, linguistic and otherwise, and consult firsthand the contributions of our non-Anglo-Saxon brothers; untold riches often await us. The story of congenital hypertrophic pyloric stenosis is eminently suited for this departure.

Sincerely yours,

CHRISTIAN V. CIMMINO, M.D.

November 23, 1962

Fredericksburg, Virginia

To the Editor:

Doctor Cimmino has asked me, as a pediatrician in Fredericksburg, to comment on the letter from Doctor Fink in reference to his article in the November issue of the Virginia Medical Monthly.

Doctor Fink points out good basic clinical

medicine regarding his feelings towards x-ray studies for the diagnosis of hypertrophic pyloric stenosis. I do not feel that we are as fortunate as Doctor Fink in making a positive clinical diagnosis of this condition as often as he does. At best, our clinical diagnosis is correct in only about 70% of the patients and is made from the characteristic clinical findings of history and the presence of the "olive". The history can be misleading, however, and milk allergy, for example, can present with projectile vomiting. Even the expert fingers of our capable surgeons do not have a better percentage of feeling the "olive". Perhaps we do not wait long enough for the classical picture to develop before asking our radiologist for help. We do not doubt for a minute that we would be able to feel the "olive" in almost 100% of the patients with marasmus.

We do not feel that the small amount of radiation given during a proper examination of the pyloric region is as dangerous as allowing the infant to progress to dehydration, electrolytic imbalance, gastric bleeding, aspiration, and marasmus, requiring many pre-operative corrective procedures which may affect the end-result and prolong the hospital stay. No one knows the exact answer to such a problem but in our cases, we feel we have expedited the diagnosis and treatment at no risk to the infant.

Sincerely yours,

JOHN PAINTER, M.D.

November 27, 1962

Fredericksburg, Virginia

Objectives and Program of the AMA Committee on Nursing

The program of the AMA Committee on Nursing is based on 3 general assumptions: (1) that nurses have a separate and distinct professional status and their contributions are those of co-workers; (2) that nursing should expect the medical profession to support and endorse high standards of nursing education and service; and (3) that each of the various levels of academic and technical accomplishment in nursing makes its own unique contribution to the total health care of the public.

On the basis of these broad assumptions, the Committee has adopted the following objectives:

1. *To expand and strengthen liaison activities between organizations representing the medical and nursing professions at the national, state, and local levels.*

Liaison has been established with all the major nursing organizations (including the American Nurses' Association, the National League for Nursing, the National Federation of Licensed Practical Nurses, the National Association for Practical Nurse Education and Service, and others) as well as with constituent and component medical associations, medical specialty groups, and several national organizations with a collateral interest in nursing.

The Committee feels that one of its major contributions is to promote interprofessional conferences between physicians and nurses. A committee composed of AMA and ANA representatives is now planning a conference on nurse-physician aspects of professional practice. The Committee on Nursing will also encourage the inclusion of nurses on programs of national and state medical meetings and attempt to remedy the scarcity of positively oriented, unbiased material on nursing in the medical literature.

2. *To study and report to the medical profession on current practices and trends in nursing and on developments among nursing auxiliary personnel.*

Through its headquarters staff, the Committee is collecting information on nursing matters vital to physicians. A file of abstracts, excerpts, and reprints is available for quick reference.

3. *To stimulate, initiate, and, where feasible, support research in areas pertinent to the nurse-physician relationship in professional practice.*

Such research requires the collaboration of many disciplines. Several nurse-physician teams are now engaged in extensive research projects. These include studies of interdisciplinary participation in planning care; the nursing needs of chronically ill ambulatory patients; and the amount and type of nursing service which makes the maximum contribution to maternal and infant welfare.

4. *To offer advisory services to both professions on interprofessional matters.*

The secretary and chairman of the Committee serve at present on the committee on careers of the National League for Nursing. The secretary is also a member of the advisory council of the National Federation of Licensed Practical Nurses, the National League for Nursing's committee to study costs of nursing education, and the hospital advisory council of the National Association for Practical Nurse Education and Service. The Committee will also serve as a consultant group to committees, councils, and departments within the AMA. Similar services have been offered to constituent and component medical associations.

5. *To provide support and assistance to the nursing profession and its nonprofessional auxiliary personnel in their efforts to maintain high standards.*

Nursing, like medicine, is faced with pressing demands for change if high standards are to be maintained in our present environment of rapid scientific and social advances. Nursing is now engaged in a continuous reevaluation of its educational system, its scope of services, its legal responsibilities, and other phases of its practice which reflect in the quality of patient care. This Committee supports the efforts of the nursing profession in maintaining high standards and offers its cooperation and assistance.

6. To encourage physicians to accept invitations to serve on nursing school faculties.

In view of growing pressures on the professional nurse to assume responsibilities of a medical nature, the teaching role of the physician warrants reevaluation. At the present time, some nursing schools are finding it necessary to assign nurse faculty members to lecture on medical subjects.

If the medical and nursing professions are to make the fullest use of their joint potential, they must have not only a common denominator of interest in the patient and a comparable body of knowledge, but also the kind of relationship that derives from a deeper appreciation of, and respect for, each other as allies working toward the same goals.

CLARENCE H. BENAGE, M.D.

ELIAS S. FAISON, M.D.

BENSON W. HARER, M.D.

CHARLES L. LEEDHAM, M.D.

WILLIAM R. WILLARD, M.D.

ARTHUR A. KIRCHNER, M.D.

Chairman

A Course in Practical Psychiatry for the General Practitioner

During 1960, three qualified practitioners established their offices for the private practice of psychiatry in the City of Lynchburg. Their presence stimulated new interest on the part of the medical community in the care of the emotional and mentally ill. This interest became manifest by increasing re-

quests for consultations as well as frequent questions and informal discussions concerning "problem cases", readily recognized emotionally ill patients and overtly psychotic cases by the various physicians in the community.

The author was particularly impressed by the sustained genuine interest on the part of many general practitioners to learn some fundamentals as well as practical aspects of handling more adequately, patients who presented emotional problems. Because of this interest on the part of several general practitioners, the author undertook to explore the particular wishes of many of these physicians in order to set up a short course in psychiatry that would appeal to those most concerned.

Dr. John W. Davis, Jr., the then current President of the Blue Ridge Chapter of the Virginia Academy of General Practice and Dr. William D. Richards, Program Chairman, were most helpful in assisting the author in the choice of subjects that they felt would have the most appeal. Dr. Edward J. Stoll, Chairman of the Mental Health Committee of the Virginia Academy of General Practice had also been very supporting and helpful in making suggestions about the mechanics of the course.

On the advice of these general practitioners, it was decided to offer a course emphasizing practical aspects of psychiatry. The course was to be given over an eight week period with the group meeting each Friday night from 9:00 to 10:30 P.M. The author was to speak informally for a thirty minute period on the subjects preferred by the group. This was to be followed by a one-hour discussion on cases currently being seen by members of the group.

A letter was sent to each general practitioner in the community outlining the mechanics of the course and requesting that those interested return an enclosed postcard indicating a definite interest in enrolling in the course. Upon the receipt of a favorable reply, a letter listing the following twelve

subjects was sent to each general practitioner requesting that they choose eight subjects they preferred to be discussed.

1. Technique of interviewing
2. Doctor-Patient relationship
3. Involutional reactions
4. Recognizing the depressed patient
5. Use of medication in emotional illness
6. Handling the discharged psychiatric patient
7. Psychiatric emergencies
8. Handling the patient with multiple complaints
9. Management of the organic case with emotional overlay
10. Principles of marriage counseling
11. Principles of handling adolescence
12. Hypnosis and the General Practitioner

All of the general practitioners polled, elected Technique of Interviewing. Recognizing the Depressed Patient and the Use of Medication in Emotional Illness were almost unanimously chosen. Because of the high interest shown in almost all of the subjects, it was decided to combine Involutional Reactions and Recognizing the Depressed Patient in one session and the Principles of Marriage Counseling and the Handling of Adolescents in another. The topic Management of Organic Cases with Emotional Overlay and Hypnosis and the General Practitioner were deleted because of being of the least interest to the group.

After the group began to meet and discuss various types of cases, much interest was shown relative to the management of alcoholics. It was possible to arrange for a formal, didactic presentation of this problem and a meeting was arranged with the entire medical community invited to attend. Dr. Paul C. Fagan, the then current President of the Essex County Chapter of the New Jersey Academy of General Practice and the Medical Director of the Alcoholic Clinic of the Mountainside Hospital, Montclair, New Jersey, gave an excellent presentation on practical aspects of handling the problem drinker.

Dr. John W. Davis, Jr., was instrumental in arranging for the entire course of the instruction as well as for Dr. Fagan's presentation to be accepted for Category I Post-Graduate Credit by the Board of Education of the American Academy of General Practice.

The course got underway with ten physicians enrolled. After the first meeting, the senior physician in the group dropped out because of the inconvenient time of the meetings. The remainder of the meetings were very well attended with only an occasional member of the group being absent. It was noteworthy that when it was not possible for one or another of the doctors to be present, they invariably phoned beforehand to express their regrets.

The first meeting proved to be the only one in which there was a little stiffness and formality during the presentation of the didactic material. Beginning with the second meeting of the group, and throughout all of the other meetings, various members asked questions and/or injected pertinent material during the didactic discussions. This served to keep the discussions active and lively and the allotted ninety minutes for each meeting passed rapidly. With the exception of the meeting during which Depressive Reactions was discussed, the time schedule was compulsively held too. There was so much spontaneous discussion by the entire group on Depressive Reactions that an additional forty minutes passed without anyone being aware of the time.

During many of the case discussions the various members sided with one discussant or another relative to a particular attitude or philosophy of managing a particular type of case. This was especially evident in discussions about handling obese adolescent girls. This discussion, which continued throughout several meetings of the group, offered an excellent opportunity for the author to speak about the physician's personality as projected into the treatment relationship. Throughout the discussions, the

author constantly emphasized the importance of the physician as a therapeutic agent in his ministering to all of his patients. This seemed to be the one important factor that the entire group did not fully appreciate. In the author's opinion, each member of the group became more readily aware of this by the end of the course.

Several members of the group indicated a desire to continue the meetings but on a monthly basis. A schedule was established and the group met at different members homes one night each month, discontinuing for the summer months. At these meetings, cases were discussed and additional material was presented. For the most part, the didactic presentations were a continuation of previously presented material.

While there is no objective way of determining just what and how much was gained by the participating physicians, the remarks of a few of them are noted as being representative of the group. One of the physicians wrote, "It is hard to evaluate how one is benefited by such a program. I would say that the two most important things are: (1) I think I know now better how to decide who needs the services of a psychiatrist and (2) I think I am better able to help a lot of people who would never go to a psychiatrist and, therefore, would not receive any treatment unless some family doctor treated them." Another participant in the group noted, "I find that I now take more interest in patients with emotional illnesses, and rather than dismissing them rapidly, now treat selective cases and feel that I am actually doing them some good. I would like to pursue this new interest by reading and taking more courses. I think the general practitioner can be a real help in this area if he knows what he is doing." And—"The seminar was helpful in making me

realize that all other general practitioners have the same problems with psychosomatic and emotionally upset patients that I do, whereas I had thought that I had an abnormally high proportion of them. The experiences of the others was very helpful and stimulating." The following is also quite representative—"I sincerely hope that other psychiatrists will feel that they can devote additional time to the general practitioners as I feel that, in this manner, the general practitioner can be educated or implemented with knowledge to a point where he can render additional service to his patients and thereby fulfill his obligations and hopes in being the family doctor to every family, at the same time realizing his limitations and the necessity of referring those patients to the proper specialists for which he feels incapable of treating."

The author feels that he gained a great deal too. The preparation of the didactic material offered an excellent opportunity for review as well as a rewarding search for new material in the current, voluminous material being prepared for general practitioner consumption on psychiatric subjects. The presentation of every day cases selected from their own practices by the various participants presented different problems that one generally sees in a private psychiatric practice. It proved challenging to come up with practical and helpful suggestions for the handling of various types of problems within the framework of a busy family doctor's office setting. And lastly, it furnished the author an excellent view and greater appreciation for the everyday work of a dedicated family doctor. All in all, it was very much worth the time and energy expended.

JOHN G. NOVAK, M.D.

Member, A.P.A. Committee on Liaison
with the A.A.G.P.

Woman's Auxiliary . . .

<i>President</i>	Mrs. A. B. Gravatt, Jr., Kilmarnock
<i>President-Elect</i>	Mrs. J. M. Moss, Alexandria
<i>Vice-Presidents</i>	Mrs. J. T. McFadden, Norfolk
	Mrs. Theodore McCord, Fairfax
	Mrs. C. S. Armentrout, Harrisonburg
<i>Recording Secretary</i>	Mrs. R. L. Norment, Arlington
<i>Corresponding Secretary</i>	Mrs. N. R. Tingle, Mollusk
<i>Treasurer</i>	Mrs. W. A. Eskridge, Parksley
<i>Publications Chairman</i>	Mrs. W. M. Eagles, Richmond
<i>Directors</i>	Mrs. W. F. Grigg, Jr., Richmond
	Mrs. F. Clyde Bedsaul, Floyd
	Mrs. Walter A. Porter, Hillsville



New President.

Mrs. Arthur Broadus Gravatt, Jr., (nee Ruth Bailey Latham), was born and raised in Richmond. She attended public schools and was graduated from John Marshall High School. She went from there to Westhampton College and received her B.A. degree in 1940.

Dimple—as she is known to all her friends—became the wife of Dr. Broadus Gravatt of Ellerson in October, 1941. Dr. Gravatt was at that time in the U. S. Public Health Service and they made their home in Norfolk, Virginia, Mobile, Alabama, New York City, and El Reno, Oklahoma, during the years 1942 to 1945.

On being discharged from the service in 1945, Dr. Gravatt was invited to come to Kilmarnock in the Northern Neck to

practice medicine, which he did to the mutual satisfaction of his family and the community.

Mrs. Gravatt is a charter member of the Woman's Auxiliary to the Northern Neck Medical Association which she served as President in 1948. Since then she has been on the Board of the Woman's Auxiliary to The Medical Society of Virginia serving as chairman of various committees and as Corresponding Secretary under Mrs. Lee S. Liggan in 1956-57. More recently she has been First Vice President and Recording Secretary before being elected President-elect in 1961.

Mrs. Gravatt is a member also of the Woman's Auxiliary to the Virginia Academy of General Practice and served that organization as Treasurer from 1955-1960.

Dr. and Mrs. Gravatt are the parents of three sons and a daughter ranging in age from 14 to 19. They are all members of the Kilmarnock Baptist Church and take an active part in the life of the church and the community.

NANCY C. HUBBARD

Committee Chairmen.

The following have been appointed by Mrs. Gravatt as committee chairmen for the coming year:

A.M.A.-E.R.F.—Mrs. N. M. Canter, Jr., Harrisonburg

Bulletin—Mrs. W. Nash Thompson, Stuart

Civil Defense—Mrs. Robert D. Keeling, South Hill

Community Service—Mrs. Ralph R. Landes, Danville

Finance—Mrs. Walter A. Porter, Hillsville

Health Careers—Mrs. Ronald N. Shelley, Norton

Health Education—Mrs. Peter Soyster, McLean

Legislation—Mrs. George K. Brooks, Richmond

Leigh-Hodges-Wright Memorial Fund—Mrs. Edward S. Ray, Richmond

Members-at-large—Mrs. Walter H. Buf-fey, Rocky Mount

Membership—Mrs. James M. Moss, Alex-andria

Nominating—Mrs. William F. Griggs, Jr., Richmond

Organization—Mrs. James M. Moss, Al-exandria

Philanthropic Fund—Mrs. George W. Kelly, Pulaski

Program—Mrs. J. T. McFadden, Nor-folk

Publications—Mrs. William M. Eagles, Richmond

Research and Romance of Medicine—Mrs. Jack J. Grizzard, Branchville

Revisions—Mrs. Kalford W. Howard, Portsmouth

Rural Health—Mrs. Thomas E. Smith, Hayes

Safety—Mrs. Hermann F. Diamant, Ar-lington

Student Loan Fund—Mrs. Lee S. Liggan, Irvington

Mrs. Maynard R. Emlaw, Richmond, is

Parliamentarian; Mrs. Byron T. Eberly, Portsmouth, Historian; and Mrs. Hawes Campbell, Richmond, Chaplain.

Members of the Advisory Council are: Dr. W. Linwood Ball, Richmond, chair-man; Dr. A. Broaddus Gravatt, Jr., Kilmar-nock; and Dr. Malcolm Harris, West Point.

Richmond.

Newly elected officers of the Auxiliary to the Richmond Academy of Medicine are: President, Mrs. Bernard D. Packer; presi-dent-elect, Mrs. L. Benjamin Sheppard; vice-president, Mrs. Robert K. Duley; treas-urer, Mrs. Frederick E. Vultee; correspond-ing secretary, Mrs. Adney Sutphin; assistant corresponding secretary, Mrs. Reuben Simms; and recording secretary, Mrs. R. Bruce Lawrence.

In September, the members of the Aux-iliary were invited to have their first joint meeting with the Richmond Academy of Medicine. Mrs. Packer presented the Wo-man's Auxiliary plans for 1962-63 and also a resume of the work of the Auxiliary.

The two groups enjoyed a social hour with refreshments arranged by the Auxiliary under the direction of Mrs. Irwin Rifkin and Mrs. George Ritchie.

Good Judgment in Drug Therapy

We are all too human—members of the health professions, drug manu-facturers, advertising agencies, sick people, and all the rest of us who are trying to live happily—and often our emotions get in the way of our good sense. When it comes to drugs, it might be wise to let the experts in the field tell us what it's all about, and then use our own good judgment in deciding whether the risk of the drug outweighs the risk of the disease. There is risk both ways, and this we must understand.—Chauncey D. Leake, Ph.D. in *Medical Tribune*, September 10, 1962.

The Eleventh Commandment

DURING the next twelve months, four of you will become embroiled in a lawsuit or perhaps, with luck, just the harassment and annoyance of an out-of-court settlement. Why? Simply the perfectly natural reaction of that lethal combination—a malcontent patient and a thoughtless colleague, who was “talking when he should have been listening!”

There is nothing new or startling in this statement. We’ve been warned countless times but “we’re a little mite slow learnin’.” Of all the professions we are—apart from our work—the most naive; the least adept at meeting situations; the most apt to put our foot in our mouth. Can you imagine a lawyer igniting a brush fire against another barrister, knowingly or otherwise?

This subject is fresh on our mind in the form of a mushrooming dossier on a fellow physician—a prime candidate for the grievance committee—recently dumped in our lap; one of the less pleasant facets of holding office in medical societies.

Hear these excerpts from the original letter of complaint—a “broadside” aimed at the Presidents of the State Board and descending echelons of organized medicine in Virginia—concerning a young daughter with a laceration of the “top” of her foot. “. . . without gloves, gave her an injection for pain—seemed in a great hurry—saying there was no time for the injection to take effect and closed the wound with five stitches.” And, “. . . later that evening, she suffered severe swelling and pain and was taken to another doctor, in another town, who reoperated the wound, *removed a blood clot and repaired the severed artery and nerve and admitted her to a hospital for three days!*” “I would hate to hurt the many good doctors practicing in . . . County, but I am in the belief that I have ample grounds for legal action—etc.” Implication—what are you going to do about it?

Horsefeathers! But to the lay mind—well. Now Dr. “B” probably held no personal malice for Dr. “A.” Perhaps his ego was sagging that day and required propping up a bit. Can’t you just hear him patting himself on the back and wouldn’t you like to see that “microscopic” arterial and nerve anastomosis and repair so fluently described to the irate father? And so the stage is set for another malpractice suit.

It so happens that we hope this will be a minor one and that, after hours of labor and trouble for many people and reams of needless correspondence, the complainant may be satisfied with a reprimanding letter—but this beginning was typical of 98% of all grievances, and could so easily have been avoided.

No—you may not be one of the unlucky four, but—along with us all—you are paying through the nose in the form of malpractice insurance premiums which have, in the past twenty-five years, increased several hundred percent, in inverse ratio to the dimming of our collective “doctor image”.

When are we going to grow up and stop this juvenile and schizophrenic idiocy?

FRED DELP, M.D.

The AMA Committee on Nursing

THE AUGUST 4 ISSUE of the Journal of the American Medical Association carried a report on “Objectives and Program of the A.M.A. Committee on Nursing.” Miss Florence M. Alexander, Director of the Department of Nursing, Division of Scientific Activities of the A.M.A. has forwarded to the Virginia Medical Monthly a reprint of this report and requested that this be published in your journal. The Virginia Medical Monthly is happy to comply with this request and the report may be found on page 37.

It is suggested that all members of The Medical Society of Virginia read this report. The assumptions and objectives, so far as they go, appear sound. The writer and doubtless the medical profession generally are in sympathy with the desire of the nursing profession to increase the present high standards of nursing education.

One misgiving, which has been shared by many physicians during the past few decades, is not dispelled by reviewing this report. Is the care of the patient sufficiently emphasized in present day teaching of nurses? A careful reading of this reprint discloses three and only three, rather oblique references to care of the patient. There is a growing belief in medical circles that the teaching methods now in vogue in training schools for nurses are designed to produce too many chiefs and far too few Indians.

It is greatly to be desired that the nurses who currently are being trained to teach other nurses, who in turn will instruct still other nurses, will at some stage in this seemingly endless cycle pause long enough to produce more nurses to relieve the present acute shortage of nurses who actually are engaged in caring for the sick.

HARRY J. WARTHEN, M.D.

Society Activities

Mid-Tidewater Medical Society.

Dr. Douglas Andrews, Tappahannock, has been installed as president of this society. Other officers are: president-elect, Dr. William Brown, Gloucester; vice-president, Dr. Shirley Olsson, West Point; secretary, Dr. M. H. Harris, West Point; and treasurer, Dr. William Hosfield, West Point.

Richmond Academy of General Practice.

Dr. Reuben F. Simms will be installed as president of the Academy at the January meeting. He succeeds Dr. William C. Gill, Jr. Other officers are: president-elect, Dr. Fred H. Savage; vice-president, Dr. William M. Robinson; secretary, Dr. J. Landon Moss; and treasurer, Dr. Glen Allen.

Virginia Chapter.

On December 1st, some of the members of the International College of Surgeons in Virginia met and organized a Virginia Chapter. Officers are: president, Dr. Peter Pastore, Richmond; president-elect, Dr. Charles Easley, Danville; vice-president, Dr. Edgar Weaver, Roanoke; treasurer, Dr. Garrett Dalton, Radford; secretary, Dr. Francis H. McGovern, Danville; and assistant secretary, Dr. J. T. Showalter, Christiansburg. Members of the Board of Directors are Drs. H. L. Bell, Roanoke; G. S. Bourne, Roanoke; Russell Buxton, Newport News; Andrew Giesen, Sr., Radford; Eugene Lowenberg, Norfolk; Douglas D. Fear, Roanoke; Herman I. Salte, Alexandria; and Jacob G. Jantz, Bedford.

The next meeting will be held at the Homestead Hotel, Hot Springs, in conjunc-

tion with the meeting of the Mid-Atlantic Section of the International College of Surgeons.

American College of Physicians.

The Virginia Section of the American College of Physicians will hold its annual scientific meeting on February 16th at The Golden Triangle, Norfolk. Lectures will be at 10:00 A. M., and 4:00 P. M., and all physicians are invited.

Virginia Society of Internal Medicine.

The sixth annual meeting of this Society will be held at The Golden Triangle, Norfolk, on February 17th, with the president, Dr. James M. Moss, Alexandria, presiding.

There will be a symposium on Coverage of Internal Medicine by Blue Shield, with the following subjects: Internal Medicine Coverage by National Blue Shield Plans by Dr. James J. Feffer, Chairman, Medical Services Committee, American Society of Internal Medicine, Washington, D. C.; Current Medical Coverage by Virginia Blue Shield by Mr. Robert C. Denzler, Executive Director, Virginia Medical Service Association, Richmond; Coverage of Internal Medicine by North Carolina Blue Shield by Dr. Roy S. Biggam, President, North Carolina Society of Internal Medicine, Charlotte; Plans to Improve Medical Coverage in Virginia by Dr. Benjamin W. Rawles, President, Virginia Medical Service Association. A Panel Discussion will follow with Dr. Morris M. Pinckney, Richmond, as moderator.

All physicians are invited to attend this meeting.

New Members.

The following doctors were admitted into membership in The Medical Society of Virginia during the month of November:

Ralph Braunschweig, M.D., Winchester
William Bryce Hunt, Jr., M.D., Charlottesville

Alvin Judson Hurt, M.D., Roanoke
William Maurice Kramer, M.D., Richmond

Ernest Eugene Moore, M.D., Hillsville
Jefferson Earle White, III, M.D., Norfolk
McKim Williams, M.D., Newport News
Walter Moffett Zirkle, Jr., M.D., Harrisonburg

Dr. Guy W. Horsley,

Richmond, was invited to participate in the Fifteenth National Assembly of Surgeons in Mexico City, November 18-24. He spoke on Management of Carcinoma of the Breast.

Dr. Lewis H. Boshier, Jr.,

Richmond, has been elected president of the Southern Thoracic Surgical Association at its meeting in Jamaica in November. He is associate professor of surgery and chief of the section of thoracic and cardiovascular surgery at the Medical College of Virginia.

Dr. William H. Hosfield

Has been named to the West Point Town Council for a term of two years. He has been active in civic affairs of the town, having served on the School Board for nine years and is a past president of the Kiwanis Club.

Dr. Frederick J. Spencer,

Richmond, has been appointed chairman of preventive and environmental medicine at the Medical College of Virginia. He was formerly director of the Fredericksburg Health District and director of the epidemiology division of the State Health Department.

Dr. Glendy to Retire.

Dr. Margaret Glendy will retire from her post as Roanoke City Health Commissioner in February, a position she has held since June 1957.

Dr. T. Stacy Lloyd

Has been elected vice-president of the Fredericksburg Chamber of Commerce.

Saunders Fellowship Grant

To mark its 75th Anniversary in 1963, The W. B. Saunders Company, medical and scientific publishers, are making available \$15,000 for an unusual medical writing award. A distinguished committee will select the grantee.

The purpose of this grant is to provide financially for a year's leave of absence for a distinguished investigator who:

- (1) Has been doing fruitful and significantly important biomedical laboratory research over the past several years.
- (2) Would like to have time for thought and for preparation of his work in monographic form.

The recipient of the award will not have to agree to publish his monograph with the Saunders Company and will be free to write,

instead of a book, a series of journal articles reviewing his research.

Areas of research in the medical sciences and clinical medicine which are acceptable for award consideration are extremely broad with a preference for those which could be translated into clinical usefulness within the foreseeable future. The investigator should be a resident of the Americas; but he may be doing or have done his laboratory work outside the Western Hemisphere.

Applications for the Saunders Writing Award may be submitted in an informal style to the Chairman of the Selection Committee. The investigator should indicate briefly the character of his research and where it has been pursued, along with a short resume of his scientific background and a bibliography of his important papers.

Applications should be submitted between January 1, 1963 and May 1, 1963 directly to Dr. Robert F. Loeb, care of W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa. A decision on the award-winner will be reached by August 1, 1963, and the recipient notified. Formal presentation will be made at an award dinner in October, 1963.

The Gill Memorial Eye, Ear and Throat Hospital,

Roanoke, announces its thirty-sixth annual Spring Congress to be held in Roanoke, April 1-5, 1963.

Guest speakers will be: Drs. Davis G. Durham, Wilmington, Del.; Kenneth M. Endicott, Bethesda, Md.; Slaughter Fitz-Hugh, Charlottesville; R. Earle Glendy, Roanoke; Bayard T. Horton, Rochester, Minn.; John Harry King, Washington, D.

C.; John C. Krantz, Jr., Baltimore; Brian F. McCabe, Ann Arbor, Mich.; Francis H. McGovern, M. D., Danville; John W. McTigue, Washington, D. C.; George W. Murgatroyd, Baltimore, Md.; Peter N. Pastore, Richmond; William H. Saunders, Columbus, Ohio; Philip G. Speath, Philadelphia; Frederick Stocker, Durham, N. C.; Harvey E. Thorpe, Pittsburgh, Pa.; and C. Dwight Townes, Louisville, Ky.

For further information, write Superintendent, P. O. Box 1789, Roanoke.

Opportunities Available in Virginia

For physicians as Directors of Local Health Departments; Salary range \$12,000 to \$15,675. Entrance salary dependent upon qualifications. Inservice training and post-graduate study opportunity available. Applicants must be American citizens, under 48 and eligible for Virginia licensure. Liberal sick leave, vacation, group life insurance and retirement benefits. Write: Director of Local Health Services, Virginia State Department of Health, Richmond 19, Virginia. (*Adv.*)

Bon Air Opening.

Modern air conditioned office building soon to begin construction, ready by spring. Five-suite office, one still available, approximately 600 sq. ft., prefer young general practitioner. Next to Buford Road Pharmacy, adequate parking available, and space available on lot for future additions or second medical building. Reply to #55, care Virginia Medical Monthly, 4205 Dover Road, Richmond 21, Virginia. (*Adv.*)

Obituaries

Dr. William Thomas Dodd,

Chase City, died October 30th after a long illness. He was eighty-five years of age and a graduate of the Medical College of Virginia in 1904. Dr. Dodd had practiced in Chase City for more than fifty years. He had been a member of The Medical Society of Virginia since 1906.

His wife and four stepsons survive him.

Dr. Vaiden Aubrey Thornton,

Stony Creek, died November 18th, at the age of seventy-eight. He received his medical degree from the University of Maryland in 1910 and had practiced in southside Virginia since 1912. Dr. Thornton was a charter member of the Stony Creek town council. He had been a member of The Medical Society of Virginia for fifty years.

A daughter and two sons survive.

Dr. William Wilson Samuel Butler,

Roanoke, died November 30th. He was seventy-seven years of age and received his medical degree from the University of Virginia in 1909. Dr. Butler had practiced in Roanoke for more than half a century. He had been a member of The Medical Society of Virginia for forty-nine years.

His wife and two sons survive him. A son is Dr. W. W. S. Butler, III, also of Roanoke.

Dr. James Morehead Whitfield, Jr.,

Richmond, died November 20th. He was sixty-four years of age and a graduate of the Medical College of Virginia in 1924. Dr. Whitfield limited his practice to Obstetrics and Gynecology and served on the faculty of the Medical College of Virginia. He had been a member of The Medical Society of Virginia for thirty-five years.

His wife and a brother survive him.

Dr. Frederick Edward Vultee, Jr.,

Richmond, died of a heart attack on December 4th. He was thirty-seven years of age and received his medical degree from Yale University in 1950. Dr. Vultee was professor of physical medicine and rehabilitation, chairman of the department, and director of the school of physical therapy of the Medical College of Virginia. At the time of his death, he was making arrangements for a conference in Richmond of professors in his specialty and of medical deans from most of the schools of medicine in the United States. He had been selected for this assignment by the United States Public Health Service. Dr. Vultee was also recently elected a trustee of the research fund of the National Society for Crippled Children and Adults. He was a member of The Medical Society of Virginia, having joined in 1957.

His wife, two daughters and a son survive him.

Dr. Bailey.

WHEREAS God in His infinite wisdom has removed Benjamin Herman Bailey, M.D. from our midst September 22, 1962, in his sixty-first year, we the members of the Williamsburg-James City County Medical Society, are grieved upon the loss of our colleague.

Dr. Bailey, a native of Powhatan County, attended Hampden-Sydney College and was graduated a Doctor of Medicine from the Medical College of Virginia in 1926. He interned at the Johnston-Willis Hospital, Richmond. Following successful general practice for twenty-six years in Sandston and Henrico County, he moved to Yorktown and established practice there.

He affiliated with our society upon moving to Yorktown and thereby enriched this group in many ways. As program chairman for many years, he brought distinguished guest speakers to our meetings. He was a member of the Advisory Committee to the Board of Trustees of the Williamsburg Community Hospital, Incorporated, during the planning and organization of this hospital. He was active in the drafting of the by-laws, rules and regulations for its

medical staff, and in the organization of the medical staff. He was vice-president of this society in 1959, and president in 1960. We feel privileged to have known him, to have been associated with him as a physician and to have been in this society with him.

THEREFORE, BE IT RESOLVED on November 14, 1962, that we convey to his bereaved family our regard of him and our sympathy in their sorrow, and

BE IT RESOLVED that we pay tribute to his memory by placing in the medical library of the Williamsburg Community Hospital, Incorporated, Harrison's *Principles of Internal Medicine* as a memorial, and

BE IT RESOLVED FURTHER that the society record in its minutes our sorrow upon his death, and that this memoriam be sent to Mrs. Bailey and also to the Virginia Medical Monthly.

KURT T. SCHMIDT, M.D.
U. G. BRADENHAM, D.D.S.
CARLTON J. CASEY, M.D.

Dr. Chelf.

WHEREAS, that in the passing on September 11, 1962 of Doctor Hugh Tucker Chelf, this Society lost its senior and esteemed member. He practiced in Culpeper, nearly 55 years and was loved by his patients and neighbors.

He attained the age of 95 and preserved a remarkable mental acuity and lively interest in medicine, though retired for the past 15 years.

RESOLVED: That in his death, this Society has lost a respected member and desires a copy of these resolutions put into our minutes, and a copy to be sent to The Medical Society of Virginia, and to his family.

CULPEPER COUNTY MEDICAL SOCIETY
R. W. QUAINANCE, JR., M.D.

Dr. Dougan.

Dr. Hubert Taylor Dougan was killed in a tragic automobile accident on October 29th, 1962, while driving to his office from his home in Montpelier.

Dr. Dougan was born in Malta, Ohio, on May 15, 1919. In 1941 he received his B.A. degree from Marietta College in Ohio, and in 1944 his degree in medicine from the Medical College of Virginia in Richmond. He continued his training at the Medical College of Virginia Hospital completing a rotating internship, an assistant residency and residency in pediatrics, and began the private practice of pediatrics in Richmond in 1947. Through the years Dr. Dougan continued his association with the Medical College of Virginia and in 1955 he was appointed Assistant Clinical Professor of Pediatrics, a position he retained until his death.

He was a member of Phi Beta Pi Fraternity, the Richmond Academy of Medicine, the Richmond Pediatric Society, The Medical Society of Virginia, the Virginia Pediatric Society, and a diplomate of the American Board of Pediatrics.

Dr. Dougan married Virginia Kern Wagner on April 10, 1943, and they had two children, Ronald Taylor and Rebecca Kern.

For many years he had many interests outside of his profession. He enjoyed raising roses and horses and won acclaim in both fields. He was a past president of the Potomac Rose Society and was an active member of his community. He was a member of the Methodist Church and of the Ruritan Club of Montpelier.

He will long be remembered by both friends and patients for the extreme warmth of his personality. His patients have exhibited the utmost loyalty to him throughout his years of practice.

May we as his Academy of Medicine extend our sympathy to his wife and family and send a copy of this letter to them and also to The Medical Society of Virginia for publication in the Virginia Medical Monthly.

TOM CHALKLEY, M.D.
SAMUEL ANDERSON, M.D.
ANTHONY AUSTIN, M.D.

Dr. Keith.

With deep regret we record the death of our respected member and good friend, Dr. Michael John Keith who died in Norfolk on October 22, 1962, at the age of thirty-five.

Dr. Keith was born in London, England, on August 6, 1927. He was educated at the City of London School and at St. Thomas Hospital Medical School, University of London where he graduated with a degree of bachelor of medicine in 1951. He served internships at the Mercer Hospital in Trenton, New Jersey, in 1951 and St. Vincent's Hospital in Toledo, Ohio, from 1951 to 1952. He was a resident in psychiatry at Eastern State Hospital in Williamsburg, from 1952 to 1953; at Highland Hospital in Asheville, North Carolina, from 1953 to 1954; and at the Connecticut State Hospital in Middletown, Connecticut, from 1955 to 1956.

In 1956, he came to Norfolk as director of the Norfolk Mental Health Center. He continued in this position until 1958 when he entered fulltime private practice.

In 1959, Dr. Keith married Miss Harriet Amursky of Norfolk. He is survived by his widow, three children, his parents and one brother.

He was a member of the Norfolk County Medical Society, The Medical Society of Virginia, the Amer-

ican Medical Association, the Southern Medical Association, the British Medical Association, the Neuropsychiatric Society of Virginia, the American Psychiatric Association, the Southern Psychiatric Association and the Royal-Medico Psychological Association. He was a diplomate of the American Board of Neurology and Psychiatry.

Dr. Keith was a capable, energetic and devoted physician. He was dedicated both to his patients and to all mentally ill people. He was an outspoken advocate of more humane commitment procedures and laws in Norfolk and the State of Virginia. He initiated a movement to establish a first class psychiatric hospital in the Norfolk area. His death represents a great loss to his colleagues, his patients and his friends.

THEREFORE, BE IT RESOLVED by the Norfolk County Medical Society that we express our sorrow at the loss of our friend and colleague and our sincere and heartfelt sympathy to his family; and that a copy of this memorial be sent to his family.

JOHN H. FURR, M.D., *Chairman*
ROBERT H. THRASHER, M.D.
WILLIAM F. GIBBS, M.D.

Dr. Smith.

WHEREAS Dr. Edward Barney Smith II, our colleague and friend, was called to his Reward on September 15, 1962, and WHEREAS, we, his fellow physicians, recognizing our great loss and that of the community wish to pay tribute to his memory by the unanimous adoption of this resolution.

Dr. Edward Barney Smith II was born on August 3, 1910, in Yorktown, a son of the late Dr. Edward B. Smith and the late Alice Thomas Smith.

He attended Randolph-Macon Academy in Front

Royal, and graduated from Randolph-Macon College in Ashland, in 1935. Dr. Smith received his degree in medicine from the University of Virginia Medical School in 1939, and his internship was served at Norfolk General Hospital, Norfolk.

Dr. "Ed" served his Country during World War II for five years, rising to the rank of Commander in the First Marine Division.

From 1949 until his demise, he practiced in Waynesboro, first in general practice and during the past two years as a member of the Staff of the Medical Department of the Waynesboro Works of E. I. du Pont de Nemours & Co., Inc. He had previously had a general practice in Enfield, North Carolina, and Bridgewater, Virginia.

Dr. Smith was a member of the Main Street Methodist Church and had served on the Board of Stewards. He was a member of the Staff of the Waynesboro Community Hospital and was one of its past presidents. He was also a member of The Medical Society of Virginia and the American Medical Association.

His devotion to his family, his profession, his patients and many friends, will be remembered by all who enjoyed his acquaintance.

WHEREAS, we, his fellow members of the Augusta County Medical Society on this the 7th of November, 1962, unite with his many grateful patients and friends to share with his family in their bereavement.

NOW, THEREFORE, BE IT RESOLVED that we convey to his family our sincere sympathy and deep respect for his memory.

BE IT FURTHER RESOLVED that a copy of this resolution be spread upon the minutes of the Augusta County Medical Society, a copy published in the Virginia Medical Monthly, and a copy sent to his family.

Respectfully submitted,
CHARLES L. SAVAGE, M.D.

Guest Editorial

The Mid-Thirties Syndrome

THE SYMPTOMS of premenstrual tension have been experienced for ages by womankind. The name and description of the symptom-complex date back only some thirty years.

The name is highly descriptive, defining emotional as well as tissue tension (i.e., intercellular edema) in the premenstrual phase of the menstrual cycle.

The syndrome is characterized by any combination of the following symptoms, occurring during the premenstruum and usually abating with the onset of menstruation:

- Low abdominal distress
- Unusual breast engorgement or sensitivity
- Unusual weight gain
- Peripheral edema
- Visceral edema
- Abdominal distention
- Irritability, tension, depression, or emotional lability
- Headache.

Plus, often, a shortened, scanty flow.

These aspects of this distressing affliction are well-publicized, as well as the various theories of etiology and therapy. Remedies include the use of diuretics, psycho-active drugs, dietary sodium restriction, female hormones, and high protein diet.

Less appreciated is the fact that hitherto unaffected women often experience these manifestations beginning in their fourth decade of life, hence the designation "mid-thirties syndrome". This is not to imply that

the condition differs substantially from that involving women of other age groups. We wish merely to point out that the mode seems to lie around the 35th year of life.

One often hears the statement from these women "I think I would feel better if I could have a real good period." Whether this desire for a heavier flow expresses a need for a sort of soul-purging through bleeding is one question. Whether it represents instinctive insight into hypohormonal hypomenorrhea is another.

Whatever the origin of the mid-thirties syndrome—hypothalamic influence, psychosomatic aberration, ovarian failure, pituitary imbalance, unusual mineralocorticoid activity, or a complex involving these and other factors—a multiple therapeutic approach seems indicated unless we can ferret out a single basic cause.

With this in mind, we can effectively produce symptomatic relief through the use of a preparation containing a progestogen (to evoke a "real good period"), a sedative (to allay the shrewishness), and a diuretic (to relieve peripheral, visceral, and cerebral edema).

It seems, therefore, that in addition to a menarche, a menacme, and a menopause, many women also experience a "midthirties menophase". A detailed hormonal analysis of this symptom complex should be most revealing.

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The Art vs. the Science of Medicine

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These ideas, developed from years of experience, should be considered carefully by all who have to do with treating the sick.

MY YEARS IN PRIVATE PRACTICE, and perhaps even more the last few years spent as Director of Public Health and Welfare, have served to develop some convictions which are certainly controversial, but which I strongly feel deserve much more serious consideration than they generally receive.

The new edition of Webster's unabridged dictionary defines *art* as the disposition or modification of things by human skill, to answer the purpose intended. In other words, the application of useful knowledge to attain beneficial results.

The same dictionary defines *science* as systematized knowledge derived from observation, study, and experimentation carried on in order to determine the nature or principles of what is being studied.

Art and *Science* are both part and parcel of the practice of medicine, and medical history is replete with descriptions of many outstanding practitioners who beautifully combined the two. In fact, I think it may be maintained that the really influential and successful practitioner of any branch of medicine had first and basically the unique capacity to combine the *art* and *science* of medicine in appropriate balance.

In the last fifty years the science of medicine and the basic sciences, on which medical science depends, have grown, expanded, and developed so rapidly that graduates of medi-

cal schools as late as thirty years ago would not recognize the courses taught today. That is good, as extension of knowledge and basic understanding always is. But there is also danger.

Knowledge of basic principles in itself creates danger until the application of that knowledge is controlled and guided by the even more important knowledge of how it should be directed and used for the benefit of society. That is no less true of medical than of any other science.

Abstract or basic science is of value as adding to the sum of human knowledge. When used as foundations upon which useful structures may be erected it is invaluable. When precipitously grabbed and put to immediate and inconsiderate use, it may be of great and catastrophic risk.

The preceding statement may be illustrated by numerous examples well known by those informed in various fields.

Medicine, which I know best, is full of such examples in which knowledge recently acquired is immediately put to use, without regard to previous experience, related observation, or careful objective consideration of the usefulness of expected results.

A recent and rather commonplace illustration is the abuse by misuse of that extremely valuable product penicillin, which, disregarding Sir Alexander Fleming's very early warning, was used excessively, in insufficient dosage, and for unwise purposes, until the valued effect was largely lost. As a consequence, an extremely valuable product of wide usefulness, through ignorant and unwise application, lost effectiveness in many areas, and formerly valuable in a wide variety of infections, now is limited to but a few.

Another, more debatable, recent erroneous application resulted from the discovery that

certain fats administered in large doses lowered excessively high cholesterol levels, and presumably by so doing, protected against vascular changes of the type of coronary occlusion and certain strokes. The basic fact was true, but it was also true, and known for years, that the body possessed the capacity to manufacture cholesterol from other forms of fat. Consequently, while immediate benefit was derived, the long term effects were undesirable, and what was reasonably only an emergency measure was not only unprofitable on a long term basis, but actually harmful. But, grasping at one limited newly discovered fact, many hopeful and long suffering patients were forced by their physicians to endure nauseating doses of a fat having limited and short term value, before previously long and well-known facts were resurrected to rescue them.

Perhaps a more obviously pertinent observation is the insistence that all symptoms manifested by an ill person are due to one demonstrable pathologic process. Only casual reading of any medical textbook will illustrate this frequently. I personally was greatly influenced in an opposite direction years ago by a brief monograph by Dr. Llewelyn Barker. The title of the book was "Multidimensional Diagnosis" and the contention of Dr. Barker was that, except for a few dramatically acute conditions most patients, particularly the chronically ill, have multiple failures of function due to several pathologic processes, often quite unrelated. But the high blood pressure, the arthritis, and the worry and tension from personal or business problems are all treated as one process with multiple manifestations, with each being described as a symptom of the one identified disease entity.

Generally the *person* is sick, not an organ, though one organ or one system may seem to bear the brunt. Every practicing physician has seen appendicitis without pain, extensive arthritis shown by x-ray in a person who never complains, very high blood pressure in a patient who states he has never had a sick day in his life.

The difference is the patient, and the difference in the patient results from his personal emotional and physical pattern.

It is the *art* of medicine, applying with reason and judgment the *science* on which much of medicine is based, which enables the discriminating and wise physician to make the distinctions, and by so doing, avoid the apparently increasing risk of becoming only a scientific medical technician. The astounding number of accurate technical tests, growing in variety and accuracy it seems day by day, tend to produce the attitude that every disease process or improper function can be specifically located and proven by a test designed for that purpose. If the test is positive, the disease is proven; if the battery of tests prove negative, the patient is not sick and is only malingering. Neither conclusion is necessarily or always true.

The practice and the philosophy of the profession of medicine has become so splintered and divided into groups, special interests, limited projects, specific diseases, or systems, that the concept of man as a total functioning organism, composed of many parts with varying but integrated functions, all interdependent, but part of and contributing to the effectiveness of the whole has been largely lost. The inevitable and natural result has been that the practice of medicine is largely emergency services devoted to specific and immediate needs and demands, is spasmodic, very rarely continuous, lacking almost completely the concept that the emergency of today is but an incident in the total life, living, happiness, pleasure, and usefulness of a continuing existence.

Explanations are many and all are contributory to the developing pattern. The system of private medical practice, on the pay for services rendered and requested basis, with little opportunity to give continued services, is a partial explanation. Equally important is the tremendous expansion of medical knowledge with the concomitant and desirable development of restricted specialization. The tendency of patients to shop

about, make their own diagnosis and seek out for themselves practitioners thought to have special skill in a particular field, is another. The oftentimes undue worship of newly published scientific breakthroughs is a part.

Perhaps the most important reason results from the failure on the part of the physician to realize that malfunction of one or inadequate use of certain bodily systems or functions contributes to disuse or overuse of others, creates imbalance and is harmful. Another is the breakdown of that art of medicine previously emphasized under the term physical diagnosis, which is basically close and accurate observation of the physical characteristics of the entire organism. How the person stands, walks, sits, if and how he exercises, his personal habits, his diet, his vices, his enthusiasms, his work, his amusements, his vocation and his avocation, are all important but seldom considered by the busy, scientifically oriented, temporarily employed, even though very conscientious practitioner.

I repeat, it is the person who is sick, not primarily the organ, and the wise physician studies the person as much as he does the organ or the system. It is the failure to study the person that most concerns me.

Perhaps it is appropriate at this point to define that entity we speak of as the person.

I would describe a person as a human being, with interests peculiar to the individual, living in an environment to which he makes some form of adjustment, and in which he strives for recognition. Basically, I believe that describes all of us.

When the person becomes ill, he asks for relief, for cure, if that is possible, but most of all the return to activity, to his environment, and to an acceptable place in that environment.

Modern medicine increasingly offers and makes available to the practicing physician means of saving and of maintaining life, that seem at times to be sufficient ends in themselves. If we accept the definition of a *person*, and agree that the aim of the practice of medicine is to maintain or *restore the*

person, the mere maintenance of the spark of life is insufficient as an objective, in fact it may be quite unjustified in certain circumstances.

Dr. Edward H. Ryneerson, a justly famed teacher and practitioner of surgery, was recently reported in the local press as making an address in Chicago. The headline was "Release for Dying is Urged", and Dr. Ryneerson was quoted as saying that physicians should step back and let God take over instead of trying to prolong the lives of hopeless, suffering, dying patients. Further quoting Dr. Ryneerson, he stated that "I address myself to the individual physician who seeing an individual patient dying of cancer, for which every conceivable avenue of experiment has been explored with total failure, finds the patient suffering from pain and pleading for release. . . There are too many instances in my opinion, in which patients in such a situation are kept alive indefinitely by means of tubes inserted in the stomach, the vein, the bladder, or the rectum, and the whole sad scene encompassed within a cocoon of oxygen which is the next thing to a shroud. . . Certain tissue cultures have been kept alive for so many years that they have fulfilled their usefulness and been thrown out. We have used much of the information thus gained in an inverse manner—meaning that with all the fluids, electrolytes, vitamins, protein supplements, antibiotic agents, hormones, and other preparations available to us now, we can keep people suffering for an indeterminate number of months."

Dr. Ryneerson describes accurately and eloquently a situation which too often exists, when the scientific medical technician supersedes the practitioner of the art of medicine.

It is not only the patient dying of a malignancy who is so abused. Just recently one of my local medical friends severely criticized me for my refusal to authorize payment for indigent hospitalization of a seventy-six year old man who was paralyzed on one side from two previous strokes, suffered from very high blood pressure, was

maintained on digitalis and diuretics for a congestive heart failure, and who had had another stroke. When I offered to place the patient in the nursing home for care, he indignantly refused, because he considered an arteriogram necessary to determine the wisdom of surgery for the effects of the most recent stroke.

He was not treating a person. He was only concerned with treating a diseased organ. He is a scientifically oriented medical technician.

I argued without result recently with a university professor who wished me to authorize payment for indigent hospital care for additional lengthy and expensive treatment for a patient suffering from widely metastasized malignancy, who had already had all reasonable methods of approved treatment used. He was only interested in observing the results of experimental therapy.

When I stated that I had budgeted for the specific purpose of providing for needed medical services, only limited, though generally adequate, funds, and did not feel justified in diverting by administrative action those funds for purely research purposes, he could not see my point. Even when I told him that I was thoroughly interested in research and would encourage the patient's return to the hospital, and pay for her traveling expenses, but not for hospitalization, which should be the responsibility of the teaching institution, he still could not see my point.

I am concerned with unnecessary treatments for purely scientific purposes, but more because of the dishonesty often involved. The patient cannot judge the need or value of the services suggested even if he is told the true and complete picture. The family naturally wishes to have everything possible done. I do not criticize the physician for his desire to try new and promising methods of treatment.

But the patient, or the family, or both, should have the entire situation fully and honestly explained, including the chance

being taken, the actual prospects for favorable results, whether there is a possibility of cure or only varying degrees of palliation, the real prognosis, and if successful for what reasonable time beneficial results may be anticipated, if real and substantial relief is a good possibility, or if only prolonged life and suffering is the prospect, and as importantly, the costs to the patient and his family. I do not feel that the physician ever has the right to satisfy his scientific curiosity at the personal or financial cost of a deceived family, and withholding information and facts is as deceitful as giving false statements.

A similar but slightly different concern of mine results from the current exaggerated emphasis on the problem of our aged population. It is true that our over 65 age group has increased to nearly 10% of our total population, that early and compulsory retirement removes large numbers from productive and sustaining occupation, that our society is youth oriented and the aged feel left out, neglected and frustrated, that the older citizen is susceptible to more and longer disability from illness and accident and medical and hospital costs are proportionately greater, and that many are financially insecure. But there is much that is emphasized, and claims of accomplishments made, that are ill conceived, without basis in fact, politically stimulated, or purely sentimental.

Certain sentimental sociologists and dreamers boast of the extension of life and even predict that shortly the Biblical three score and ten will be extended to a century of expected life. The claim is without basis in known fact. The last few decades have witnessed an increase in the average life span, though the major portion of that increase has been in the reduction of infant mortality, control of infectious diseases, and improvements in surgical procedures. The latter two factors have affected the older group, but statistically the death rate of the over 65 group has shown practically an unchanged figure.

Our concern should be in the extension of useful and happy life, not in the prolonga-

tion of existence. We should endeavor to correct the statement attributed to Luther that "old age is the tomb of the living". The contention that pride should be taken in mere longevity is ridiculous, when early retirement is obligatory, when vegetative existence is regarded as an accomplishment, when mental and social stimulation of the aged is lacking, when there is no place in current society for the aged, when the only real accomplishment is adding to the national health and welfare burden. When I hear prophecies of a century as an average life span, when I read of research promising extension of youthful tissue function, when I hear of vitamins, nutritional supplements, and hormone products which maintain the spark of life, but I see the lonesome, frustrated, lost older person, with no place of his own, no job, a family to whom he feels a burden, a community with no resources to interest or use him, when life moves too fast for him and he roams aimlessly about or sits in the sun and dozes, impatiently waiting for the termination of an existence that has no meaning, I wonder why the boasting. Unless society makes a place for the older citizen, utilizes his training and talents, makes him feel wanted and appreciated, assists him to live a life that is useful to himself and to society, unless extended life is profitable life, our vaunted accomplishments in the extension of life are but vain boastings.

The extension of life processes, without a living which is happy and adjusted, is certainly a social failure, and when no more than that is accomplished it is also a medical failure. There is no merit in the extension of the spark of life, by artificial means, in the wasted body of an otherwise hopeless, unhappy individual.

The medical profession desperately needs social and psychologic appreciation of objectives to modify or even direct their efforts. The Hippocratic injunction to save life referred to the only means available at the time

it was written. Only the crudest of emergency measures were available and those were very limited. Hippocrates, with even his brilliant intelligence, could not have conceived of the tremendous advances in medical science and the multitude of almost miraculous facilities available today. He was entirely too intelligent to have advocated the use of all presently available resources to maintain the spark of life in an otherwise hopeless individual, but practitioners of medicine constantly refer to the Hippocratic oath as not only justification, but as absolute obligation to continue desperately utilizing every resource to keep their patients alive and breathing. When I demurred at the continued use of purely emergency measures I have on several occasions been asked "Do you want me to play God?", and have replied that if they thought they should blame God for the condition existing in the patient, then they were certainly "playing God" when they continued to use artificial and unreasonable methods to delay the inevitable.

I maintain that doctors have all too frequently abrogated their humanitarian, personal, and social, even their professional responsibilities and judgment, and substituted the worship of scientific attitudes and of research. In so doing they have often lost their status as professional practitioners of the *art* of medicine. And since the *art* is indispensable to application of the *science*, they have stultified both, and become just scientific medical technicians. The privilege of dignified death has been taken away from the hopelessly ill person by the ill advised worship as an ideal of the maintenance of the bare spark of life in a patient hopelessly doomed to die, and whose continued existence is not only useless and unhappy, but often painful, miserable torture.

The science of medicine has and will have tremendous contributions to make to saving lives; lives that are real, useful, and happy,

but unless modified and applied with full realization and understanding of what is or is not useful to the *person*, which is broadly the art of medicine, not only is unprofitable, but is actually cruel.

There is nothing new about this. It only reiterates what we all know when we stop and think, when we use our humanitarian judgment, our skill, our art, as we attempt to apply scientific progress to the saving, the maintenance, the preservation of life, remembering that the mere spark is not life, but the life and living has object, not just existence. When it does not the words of

Aeschylus are as applicable now as twenty-four centuries ago:

"O Death the Healer, scorn thou not, I pray,
To come to me, of cureless ills thou art
The one physician. Pain lays not its touch upon a corpse."

When it is not the hopelessness of incurable disease, but the advice to make living better, happier, longer, the application of *Art* as well as *Science* to the whole person, and the whole organism, is equally important.

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Long-Term Use of Cortisone-Like Drugs

Certain precautions in the use of cortisone and related drugs are advisable, according to four University of Michigan researchers. The advice was contained in an article by Drs. Conrad L. Giles, Gordon L. Mason, Ivan F. Duff, and James A. McLean, Ann Arbor, Mich., published in the November 17th Journal of the American Medical Association.

Their conclusion was based on a study confirming earlier reports of an association between the long-term use of such drugs and the development of cataracts. A cataract is an area of cloudiness of the lens of the eye. Cataracts vary in size from dot-like areas to involvement of the entire lens.

The Michigan group reported that out of 38 patients with rheumatoid arthritis who had taken moderate and high dosages of corticosteroids for over a year, lens changes had occurred in 14. The lens changes were described as "discrete, posterior subcapsular cataracts," small areas of opacity producing minor symptoms and little reduction in abil-

ity to see. Most patients with these cataracts continue to have normal 20/20 or better vision.

No similar lens changes were found in a group of 24 comparable arthritics who had never received corticosteroids.

In addition, the group reported that out of 12 persons with chronic bronchial asthma, 2 who had taken corticosteroids in moderate dosage for more than 4 years were found to have the same type of cataracts.

The amount and duration of drug administration appears to be the major determining factor in the production of the lens changes.

"Every effort should be employed to keep chronic systemic corticosteroid administration at minimal-dosage levels."

Corticosteroid is the name given to drugs modeled after the hormones produced by the adrenal cortex, the outer part of the adrenal gland, such as cortisone and hydrocortisone and their derivatives, including prednisone.

Plastic Surgery on the Eyelids

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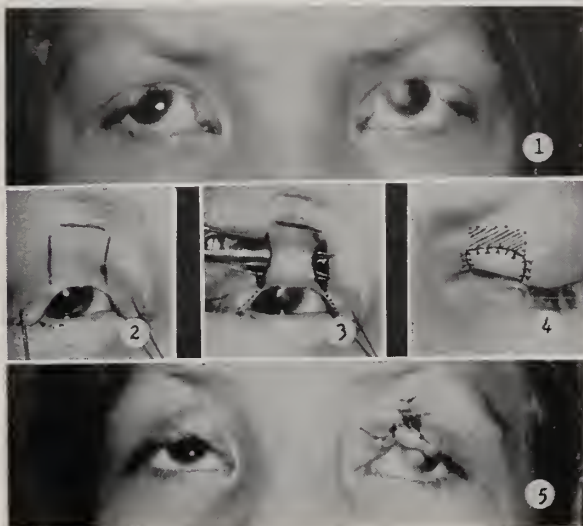
The great importance of the eyelids, both functional and esthetic, requires that plastic surgery to these areas employ special techniques.

PLASTIC SURGERY on the eyelids is a delicate and important branch of general plastic surgery from both the functional and the aesthetic viewpoints. It demands special study and modification of techniques in rare cases. Previously we have reported satisfactory approaches to the problems of congenital ptosis³ (1955), blepharochalasis⁴ (1958), hemangiomas of eyelids⁵ (1959), and tumors of the eyelids⁶ (1960). The purpose of this paper is to present the surgical techniques we prefer to employ in some additional eyelid and eyebrow problems.

Congenital Palpebral Coloboma

This is a relatively rare congenital anomaly that characterizes itself by a fissure, more or less complete, of the eyelids. Early correction should be carried out to prevent corneal ulceration and subsequent scarring from lagophthalmos. In the case presented (Fig. 1) we used a modification of the Elschmig technique, differing in that here the flap was constructed, delayed, and then advanced to the lid margin inchworm fashion (Figs. 2, 3, 4) instead of the turnover hinge method as originally advocated. This patient was sent to us when she was seven years old. Fig. 1 illustrates the defect of the upper eyelids, showing the large corneal scar of the left eye with almost no vision present. The technique was first carried out on this

left eye. Following success, a correction was done on the right eyelid. The drawback of this procedure is the use of skin-lined flap against the cornea, even though the skin



Figs. 1 to 5. Bilateral congenital coloboma corrected by using a modified Elschmig technique. Defect repaired with tissue from the same eyelid. Donor area covered with free skin graft from retroauricular region.

used here is very soft and thin. One should be reluctant to use this procedure when normal vision is present. Fig. 5 shows the right eyelid repaired and the left with sutures, though the left was stated to have been operated upon first. This was a secondary revision with a Z-plasty on the left side. The other techniques which have been described to reconstruct the upper eyelid with whatever tissue is left of the same eyelid were not used because of the extent of the defect in this case. Examination of this patient three years later revealed no further corneal ulceration or scarring.

Congenital Shortening of the Lower Eyelid

The case of Fig. 6 is that of a ten-year-old girl with a congenital vertical shortening of the lower eyelids, more evident on the right

side. In its correction a transverse incision parallel to the free eyelid margin and $\frac{1}{2}$ centimeter away from it was performed (Langenbeck's technique). The wound edges were separated and in the ensuing defect a vertical flap taken from the cheek was placed, as shown in Fig. 7. The tissue



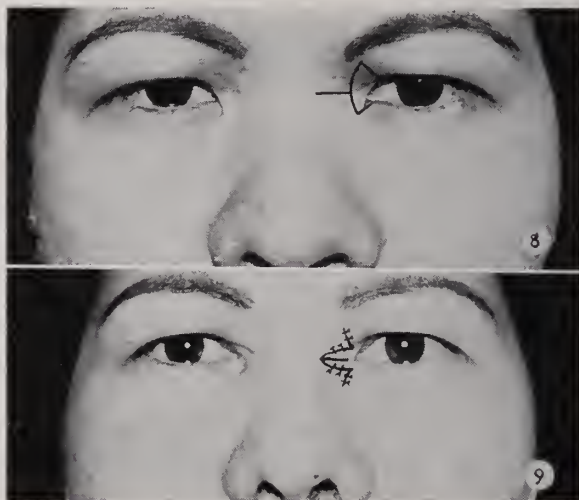
Figs. 6 & 7. Bilateral congenital shortening of lower eyelids. Photographs show the technique used in the correction of the right side; the left side will be done at a later date.

defect of the cheek was closed by undermining the wound edges and skin-sliding. The flap was taken from the cheek and not from the upper eyelid because the thicker and more rigid skin from the cheek would help in maintaining the raised lower eyelid in its new position. The left side will have to be corrected in a similar way.

Congenital Epicanthus

Epicanthus is the vertical fold of skin medial to the inner canthus, prevalent among Mongolians. It is generally bilateral and sometimes it is accompanied by eyelid ptosis and blepharophimosis. Its correction should not be done before the child is ten years old in order to allow time for the patient's nose to develop completely and thus give it a chance for its spontaneous disappearance. The operative technique does not consist in removing skin, but in adding more skin in a vertical direction at the expense of its transverse dimensions. This is accomplished by a combination of Z-plasties as can be seen in Fig. 8. The slightly curved ver-

tical incision measures 15 mm. and is 6 mm. medial to the inner canthus. There is another transverse or horizontal incision which starts off from the middle of the previous one and extends 8 mm. toward the nose. From the most distal point of the curved incision, two other incisions are made which go outward and toward the eye. These two incisions almost reach the palpebral free margin at a distance 4 mm. from the inner canthus. The four flaps thus created are undermined and transposed as shown in Fig. 9.



Figs. 8 & 9. Congenital epicanthus. Note how the epicanthal fold covers the medial commissure in the preoperative photograph (Fig. 8). The operative technique is outlined on the left side.

Reconstruction of Conjunctival Fornices

In those patients who have an artificial eye, the presence of an adequate lower fornix is important in order to permit the introduction of the prosthesis and its proper retention.

Many are the techniques used, but two are most frequently used by us. In those cases where there is sufficient unscarred conjunctival mucosa but not enough depth in the lower fornix, we proceed as follows: (1) A stay-suture is placed in the middle of the free border of the lower eyelid. (2) A 60-degree Z-plasty conjunctiva incision is made, placing its diagonal portion in an antero-posterior direction as shown in Fig. 10 (right

eye). (3) Before rotating and suturing the flaps thus created, the deep structures which separate the mucosa from the inferior orbital bony rim are dissected away. (4) The flaps are rotated and sutured—Fig. 11. (5) Vaseline gauze strips are inserted within the conjunctival cavity. In some cases, we place a small rubber tube in the deepest portion of the newly reconstructed lower cul-de-sac and hold it in place by means of mattress sutures which are sewed through and held over the cheek. Result shown in right eye of Fig. 12.

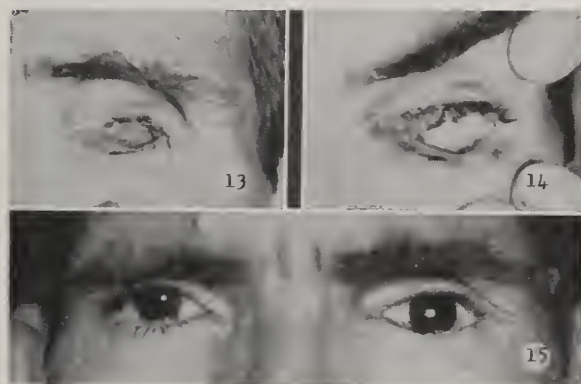


Figs. 10, 11, & 12. New technique used (mucosal Z-plasty) in the deepening of the right lower fornix. This allows the lower eyelid to hold the right artificial eye in place. (Fig. 12).

In those cases with loss of mucosa, with cicatricial tissue or when the previous technique was not indicated or did not succeed, we use a free skin graft. This graft we obtain from the post-auricular region because here a full thickness donor skin is quite thin and the raw area can be closed by approximating the skin edges without distorting the shape of the ear or making a visible scar. Split-thickness skin would tend to contract and give a poor fornix. The only disadvantage we have found is the sebaceous material secreted by the grafted skin glands which will have to be cleansed by the patient. We have found mucosal free graft technique not practical because of the small amount available. The following steps are used in the free skin graft technique:

An incision is made just behind and parallel to the free edge of the lower eyelid. Tissues are dissected away until the lower

orbital bony rim is reached. A fusiform piece of skin is obtained from the retroauricular region and sutured to the cavity thus created. Its central portion is held down over the bony rim by a small soft rubber tubing sutured with mattress stitches to the periosteum. The edges of the free skin graft are then sutured to the mucosal margins of the conjunctival incision. The ends of these interrupted stitches are left long in order to use them for a bolster method of pressure dressings. No rigid type of mold or stent is used; no tarsorrhaphy is performed. Two cases are presented from Fig. 13 to Fig. 17.



Figs. 13, 14, & 15. Insufficient left lower fornix (Fig. 14). Free skin was grafted to increase the depth of the left fornix as can be seen postoperatively without the artificial eye in Fig. 14; thus giving adequate support to the eye prosthesis on the left side (Fig. 15).



Figs. 16 & 17. Postoperative views of a case in which a retroauricular free skin graft has been placed within the orbital cavity to correct an insufficient right inferolateral conjunctival cul-de-sac.

Note that Fig. 13 is a pre-operative and Fig. 14 a postoperative photograph, both of the left side.

Symblepharon

Symblepharon is the cicatricial adhesion between the tarsal conjunctiva and the bulbar conjunctiva, giving rise to a total or partial absence of the fornices. Most cases are due to burns, either thermal or chemical, or to physical trauma. These injuries give rise to the adhesions by destroying the epithelium of the conjunctival mucosa. The way to correct this abnormality is by means of a mucosal graft or flap or by free skin graft. Simple sectioning of adhesions and holding the eyelids apart by means of a blepharostat does not cure or improve the condition. A tissue transfer with epithelium has to be done. In mild cases, local conjunctival flaps may correct the deformity; in more severe cases, free mucosal grafts have to be resorted to; in very severe cases where not enough mucosa graft can be obtained, free skin



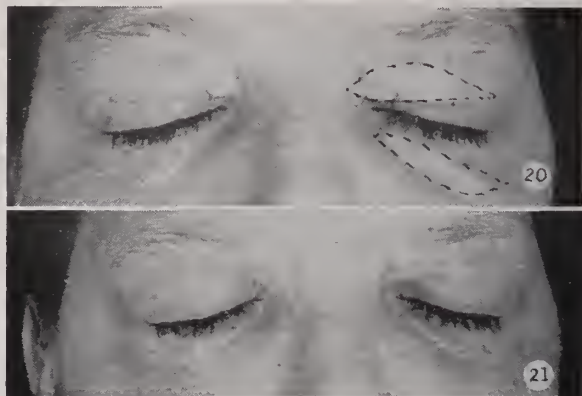
Figs. 18 & 19. Total symblepharon of the right eye (Fig. 18) corrected by an extensive free skin graft all around the eyeball. The purpose of this operation is to allow free movement of eyeball independent of eyelids. Further surgery by an ophthalmologist will be required for visual purposes.

grafts have to be performed as explained previously in the reconstruction of conjunctival fornices, and as shown in Figs. 18 and 19.

Palpebral Xanthelasma

These are yellowish growths on the skin of the eyelids, without any other objective or subjective symptomatology. They are generally bilateral and symmetrical, and are located toward the inner canthus. It is more frequent in adult women. This is an unaesthetic benign lesion which can be treated

in various ways—by electrofulguration, destruction with acids, or by surgery. We believe surgical excision to be the simplest and least painful procedure. The technique is similar to the fusiform excision of skin in the treatment of blepharochalasis. The results are excellent since not only are the growths removed, but relaxation of the skin of the upper eyelid which is frequently present in these cases is also corrected. Quite extensive excision can be performed without producing any disfigurement. (Figs. 20, 21).



Figs. 20 & 21. Quite extensive palpebral xanthelasma (Fig. 20) corrected by surgical excision and direct approximation of skin edges.

It is important to bear in mind that the long axis of the fusiform should follow the relaxed skin tension lines⁸ of the region, otherwise unsightly scars may ensue.

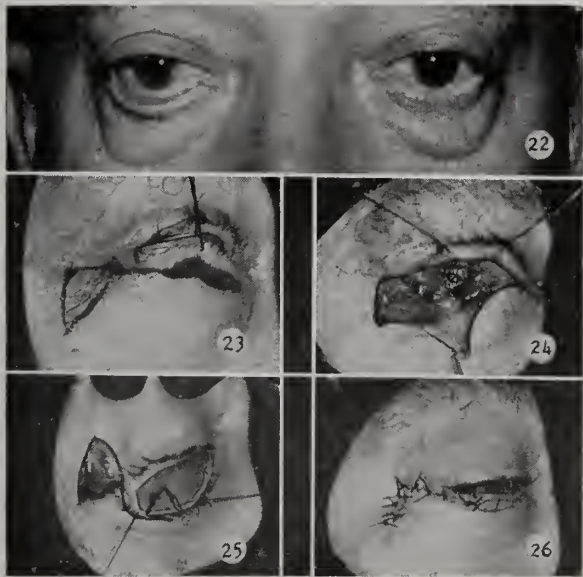
Senile Ectropion

Senile ectropion is the rolling outward of the eyelid margin due to the loss of tonicity and atrophy of the lower eyelid.

If this anomaly is not corrected, the everted conjunctiva may become hypertrophic and queratinized.

The technique used in the case presented is similar to that described by Kuhnt-Szymanowski. An incision is made parallel to the eyelid margin and just under the eyelashes. This incision is extended a little further than the lateral commissure, as can be seen in Fig. 23. A flap of tissue is raised and a triangular section is excised in the lower border of the previous incision, in its lateral extremity. Another triangle of tissue is ex-

cised which includes the free border of the eyelid, tarsus and conjunctiva at the lateral third of the lower eyelid (Fig. 25). With



Figs. 22 to 26. Senile ectropion (Fig. 22) corrected by a modified Kuhnt-Szymanowski's technique. The skin incision is seen in Fig. 23; the skin excision and lower eyelid flap are visualized in Fig. 24; the deep mucosotarsal section of tissue to be excised is drawn in Fig. 25. Fig. 26 shows the eyelids at the end of this procedure.

4-0 chromic catgut, the mucosotarsal defect is closed, and the skin defect is closed with atraumatic silk. The skin triangle excised is made larger than the mucosal triangle because of the greater flaccidity of the skin in these cases.

Tarsorrhaphy in Facial Paralysis

One of the indications for permanent partial suturing of eyelid margins is the case of facial paralysis in order to prevent corneal ulceration due to lagophthalmus.

The simplest technique consists of excising the skin of the lateral palpebral commissure with its hair and hair follicles.

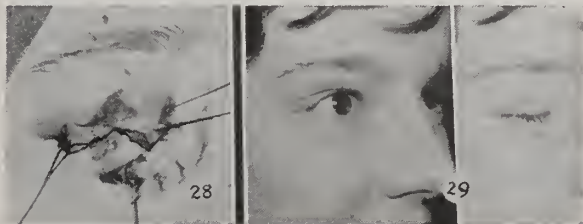


Fig. 27. Schematic drawing of sutures placed during operation for permanent tarsorrhaphy and postoperative photograph of a case with definite facial paralysis.

The skin margins are closed with interrupted silk sutures as shown in the diagram of Fig. 27.

Wounds of Eyelids

Repair of eyelid wounds differs in certain aspects from wounds closure elsewhere on the body. Here we are dealing with a soft tissue whose normal physiology is vital for the preservation and use of the eye; therefore we must use utmost care in suturing. Considering the excellent blood supply and the ease with which eyelid skin can be used as a free graft, debridement, if any, should be done as sparingly as possible. In Fig. 28 extensive lacerations were repaired and an excellent result obtained, as can be seen in Fig. 29, with only careful suturing. No



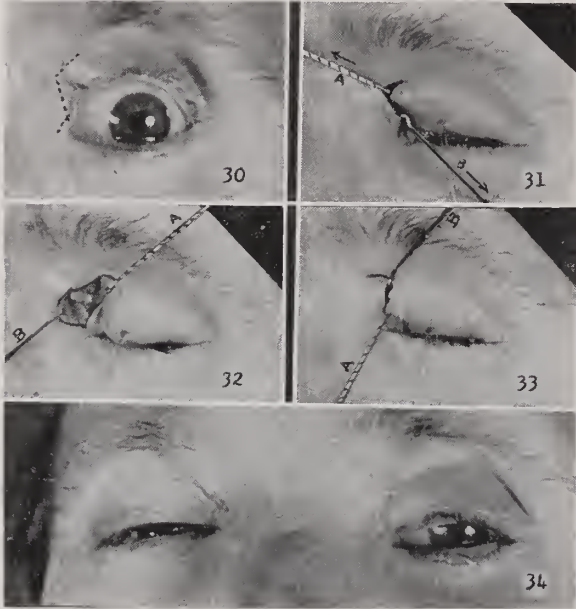
Figs. 28 & 29. Severe right upper eyelid lacerations dividing the upper eyelid into a medial and a lateral segment (Fig. 28). Results obtained by direct suturing and no debridement (Fig. 29).

attempt should be made to trim lacerated margins to create a smooth even surface for approximation. Remember that especially in this region with very fine flaccid skin, a vertical straight scar gives rise to a far worse deformity than an irregular vertical scar. Any excision of tissue should be done at a second operation when healing and scar softening have taken place. "Halving" method (suturing skin and conjunctiva at different planes) or excision of skin to make the defect elliptical in shape in order to avoid later notching of the lid margins is not necessary or advised in the primary closure of these lacerations, since it entails discarding viable tissue and may create cicatricial contracture due to the vertical anti-tension line scar⁸ thus formed.

Eyelid Scars

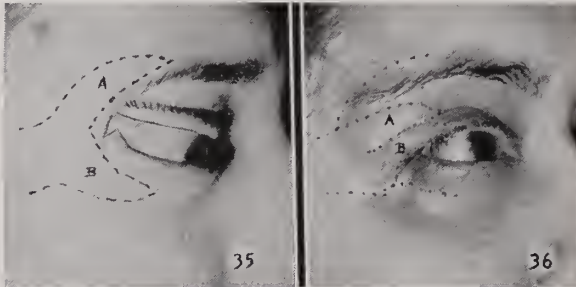
Eyelid scars could be of many varieties, and it is not the purpose of this article to study all aspects of this extensive subject.

Basically, we should remember that vertical or nearly vertical scars are greatly improved by Z-plasties.⁸ Z-plasty can also be employed to improve a detachment of the medial part of the upper eyelid. The surgical technique is adequately illustrated in Figs. 30 to 34. Eyelid tissue loss is generally



Figs. 30 to 34. Z-plasty technique used in the correction of a detachment of the medial aspect of upper left eyelid.

corrected by either local flaps or free skin graft. In Figs. 35 and 36 can be seen an



Figs. 35 & 36. Retracted scar and skin defect on right upper eyelid corrected by two local flaps taken from adjacent tissues.

example of local flaps (temporo-frontal and lower eyelid flaps) used in correcting a tissue defect on the lateral aspect of the upper eyelid done in two stages.

Free skin graft used in the repair of avulsed skin from eyelids should be of the thick-split-thickness or full-thickness type taken from regions where the skin is thin,

such as the opposite eyelid region, supraclavicular or retroauricular region. We prefer to use the latter (Figs. 37 and 38). If



Figs. 37 & 38. Retroauricular free skin graft used in the correction of retracted scar on right upper eyelid as a result of traumatic partial avulsion.

sufficient skin is grafted, we believe tarsorrhaphy is not necessary.

Eyeball Ptosis

Eyeball ptosis is usually due to fracture of the orbital floor, accompanied by downward displacement of the orbital contents. This ptosis is part of a syndrome associated with enophthalmos, diplopia, heterotopia, and supratarsal depression.

Early cases are corrected by open reduction of fracture through the maxillary an-



Figs. 39 & 40. Right eyeball ptosis with double vision corrected by autogenous cartilage graft placed over floor of orbit.

trum and gauze packing. On old cases, the material we prefer to use in order to build up the depressed floor is autogenous cartilage. Its advantage is that it is always available, the technique is not difficult, the cartilage

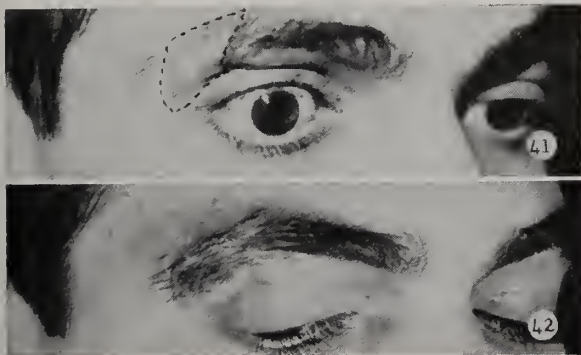
does not tend to reabsorb like heterogenous cartilage, nor give rise to any tissue reaction.

The cartilage is introduced through a transverse skin incision over the inferior margin of the orbital rim. The size of the graft depends on the extent of the ptosis. See Figs. 39 and 40.

Scars on Eyebrows

The alopecia produced by scars over the eyebrows gives rise to a marked aesthetic deformity which is easy to correct. It is of utmost importance not to shave the eyebrows preoperatively. The final scar, whenever possible, should be transverse or oblique, never vertical.⁷ Z-plasty technique is not indicated here because it would change the direction of the hairs. Contrariwise, W-plasty⁸ does find a clear indication to improve vertical scars over eyebrows.

When there is a loss of tissue, free transplantation of hairbearing full-thickness graft from the scalp's hairline posterior to the



Figs. 41 & 42. Alopecia on right eyebrow corrected with a free skin graft taken from the scalp.

mastoid process is the best method of repair. The graft is cut and sutured so that the hair will grow in the proper direction (Figs. 41 and 42).

Summary

The techniques we have used in the correction or improvement of various eyelid problems are presented. The following blepharoplasty cases are shown:

- Wide congenital coloboma,
- Congenital shortening of lower eyelids,

- Epicanthus,
- Reconstruction of conjunctival fornices,
- Symblepharon,
- Palpebral xanthelasma,
- Senile ectropion,
- Tarsorrhaphy,
- Plastic treatment of eyelid wounds,
- Eyelid scars,
- Eyeball ptosis, and
- Scars of eyebrows.

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Aortography

Current Methods and Applications

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There are three methods for making x-ray examinations of the aorta and its branches. Proper care and selection of cases reduces risk and makes the procedures valuable diagnostic aids.

RADIOGRAPHIC EXAMINATION of the aorta and its branches is now a reasonably safe, reliable, and versatile procedure deserving of wider clinical application. In this paper I will discuss our experience with aortic examination, the various methods used, and some of the indications for each method.

Radiographic examination of the aorta with contrast media was first accomplished by the translumbar route and described by dos Santos,¹ a Portuguese surgeon, in 1929. The method was not enthusiastically employed in the 1930's because vascular surgery had not yet developed and the method had little clinical usefulness. A report by Henline² in 1936 stressing the mortality in dogs also delayed its acceptance in clinical practice. In 1942 Nelson,³ in this country, reported 73 cases without serious complication. A great many cases were then reported in the urological literature. The safety and usefulness of translumbar aortography was emphasized in 3000 cases reported by Melick and Vitt⁴ and in 1000 cases reported by Smith et al.⁵ In the late 1950's a large num-

ber of reports began to appear warning of complications. McAfee^{6,7} surveyed, by questionnaire, the complications in 13,207 aortograms. There were a number of cases of renal shut-down, paralysis due to toxic effect on the spinal cord, dissecting aneurysms, hematomas and others. The serious complications amounted to 1.02%. There were 37 fatalities and these were mainly from renal shut-down and neurological complications.

Translumbar aortography has lost much of its favor among urologists, not only because of the numerous complications reported, but also because of the lack of reliability in the differentiation of renal cysts from tumors. The translumbar aortogram, however, is being used increasingly by vascular surgeons as the improved surgical results for vascular occlusive disease has become more encouraging in recent years.

The literature on translumbar aortography is well known and it is not my purpose to review our experience with this method. It is my impression, however, that the method is safe in experienced hands. It is very important to remember that the contrast agents now used are much less toxic than those upon which the morbidity and mortality reports of the 1950's were made. Statistics of morbidity compiled today would probably show a much lower complication rate.

Percutaneous retrograde femoral aortography was first described by Farinos in 1941⁸ but did not gain widespread popularity until Seldinger⁹ described his modification. This consisted of removing the needle and replacing it with a catheter of equal size. This modification allowed the use of both a wider bore catheter and provided a method of

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plugging the hole which the needle made in the artery.

In 1959 Steinberg and Finby¹⁰ described a simple modification of intravenous arteriography for visualizing the aorta and its branches.

Material and Methods

During the past year we have performed 26 aortograms on 25 patients. The patients' ages ranged from two to 60 years. Of these, 16 were intravenous aortograms, and nine percutaneous retrograde femoral aortograms.

The intravenous aortograms were performed with a slight modification of the method described by Steinberg. The patients were pre-medicated with Nembutal and a 16 gauge Stille needle was inserted into an antecubital vein in each arm. With the patient in the supine position a decholin circulation time was made to approximate the time it would take for the opaque bolus to reach the abdominal aorta. 50 ccs. of 85% Cardiografin was injected simultaneously into each arm. A manual injection was made as rapidly as possible with the arms elevated. Filming of the abdominal aorta was made on a Sanchez Perez rapid cassette changer, starting before, and ending after the time indicated by the circulation test. In practice, filming five seconds after the end of the injection and using 1½ to 2 second intervals for eight exposures was usually quite adequate to bracket the time of opacification of the abdominal aorta. Modifications of timing were made when it was desired to visualize the thoracic aorta. Without a rapid cassette changer this method can be used as described by Steinberg utilizing a three to four second exposure time to span the time that the bolus is in the abdominal aorta. We have not attempted this method because the exact timing in this technique is somewhat more critical. It is important to heat the syringes and Cardiografin to prevent jamming in the syringes.

The percutaneous retrograde femoral aortogram was performed as outlined by

Dotter.¹¹ The patients were given Demerol for pre-medication and a sterile field was prepared in the inguinal region. After infiltration with procaine anesthesia a 16 gauge Stille needle was inserted into the femoral artery. A coil spring was then passed through the lumen of the needle into the artery. The needle was removed and a measured length of 205 polyethylene catheter was threaded over the wire which guides it into the artery. The catheter was then passed into the aorta to the desired height determined by the measured length remaining outside the artery. Fifty per cent Hypaque was then manually injected as rapidly as possible and single or multiple films were made as desired for the particular problem.

In 20 of 26 attempts the examinations of the aorta were adequate and believed to be diagnostic. In four of the intravenous aortograms and one of the femoral aortograms, the opacification was not considered adequate. In one instance we were unsuccessful in entering the femoral artery. No complications occurred in this series.*

The patients examined by aortography can be classified into three general categories. There were 11 hypertensive problems, 10 vascular occlusions or aneurysms, and four tumor cases. In general, the femoral aortograms were done for renal artery visualization although the intravenous method was, on occasion, also utilized for this purpose. Most of the intravenous aortograms were performed to demonstrate occlusion of the aorta or aneurysm of the aorta. Both the femoral and intravenous methods were utilized to outline masses adjacent to the aorta or in the kidneys.

Case Reports

Case I. T.J. is a 51-year old female with hypertensive cardiovascular disease who developed weakness and pain in the legs. Intravenous pyelogram showed an unusually large right kidney. Intravenous aortography was done to visualize the renal arteries. Cystic lesions were seen in the right kidney and

*See Addendum

an unexpected stricture of the left renal artery was demonstrated. (Fig. 1) These findings were confirmed at surgery.

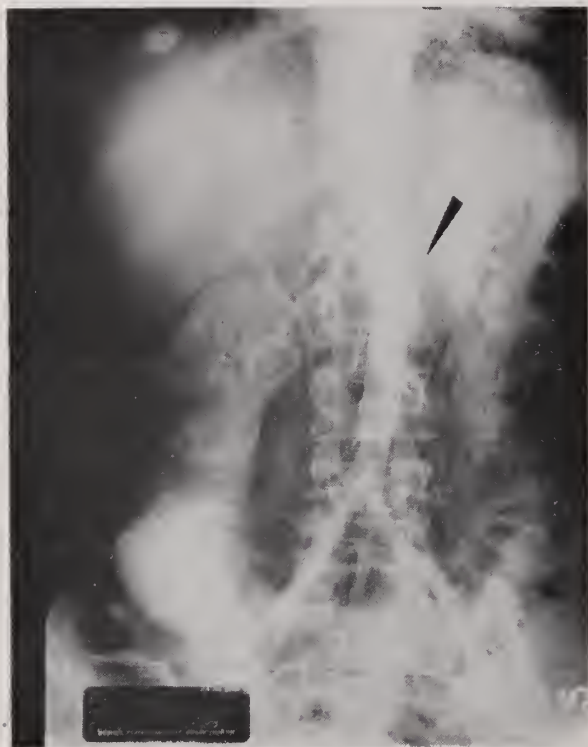


Fig. 1. Case I—Arrow indicates stenosis of left renal artery. Right renal nephrogram shows multiple cysts.

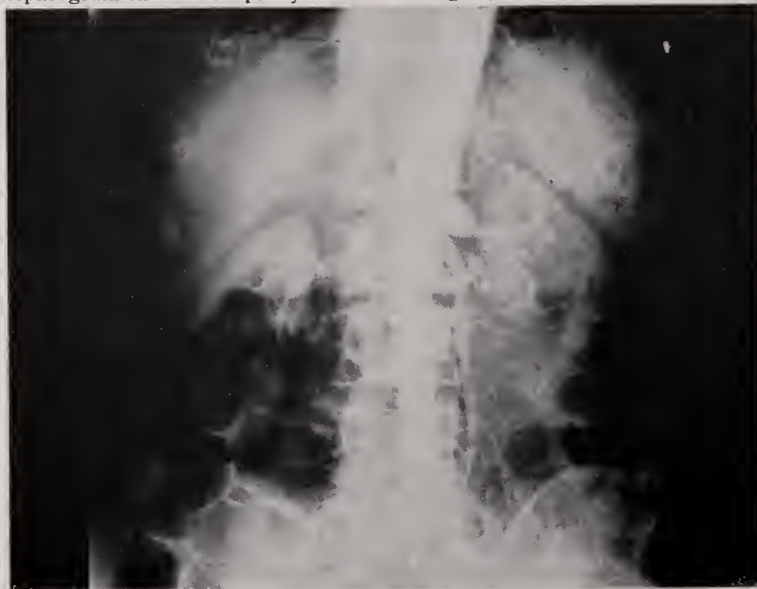


Fig. 2. Case II—Normal aortogram by intravenous method.

Case II. N.N. is a 58-year-old female who had a pulsating mass and bruit in the abdomen. She was suspected of having an abdominal aneurysm and study of the aorta was requested to outline the relation of this

aneurysm to the renal arteries. An intravenous aortogram showed a normal aorta and its branches. (Fig 2) In this instance the clinical diagnosis was proven incorrect.

Case III. D.L. is a 35-year-old female who had headaches and elevated blood pressure. A retrograde femoral aortogram was performed to visualize the renal arteries. A stenosing lesion of the right renal artery was demonstrated and proven at surgery. (Fig. 3)

Case IV. C.P. is a 54-year-old male who had a history of left renal injury many years ago. Blood pressure was elevated but kidney differential function studies were negative. Femoral aortogram confirmed the function studies by demonstrating normal renal arteries. (Fig. 4)

Case V. A.P. is a 42-year-old female with gangrene of fingers and absence of subclavian pulse on the left side. Femoral aortogram showed that the aortic arch fills but there was no filling of the subclavian artery. A vertebral angiogram showed that the distal subclavian artery filled. (Fig. 5) At surgery there was a thrombus or embolus

lodged in the origin of the left subclavian artery.

Discussion

The role of aortography in diseases of the aorta and its branches has been well documented.¹²

Vascular occlusive disease is almost always due to arteriosclerotic lesions. This arterio-

marily by the translumbar route has been very valuable in permitting the surgeon to



Fig. 3. Case III—Arrow indicates stenosis of right renal artery.



Fig. 4. Case IV—Normal renal arteries demonstrated by femoral arteriogram.

sclerotic disease may be localized or diffuse. In recent years there have been outstanding surgical achievements in vascular grafting, permitting direct surgical attack on more localized lesions. Use of aortography pri-

determine whether the lesion is sufficiently localized to be operable and, if so, the best method of repair for the particular case.

Aneurysms of the abdominal aorta are increasing in frequency and probably reflect the increasing age of the population in general. They are almost always due to arteriosclerosis and are usually lethal, ending in

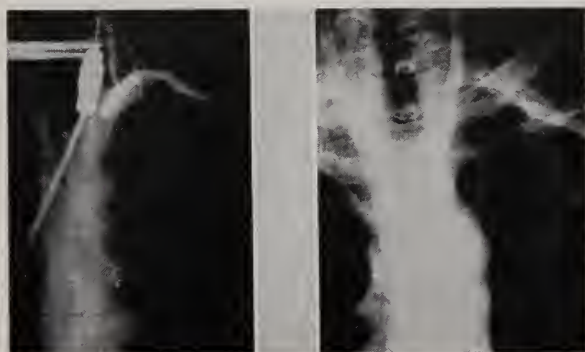


Fig. 5. Case V—Origin of left subclavian artery is not visualized. On right is femoral aortogram. On left is vertebral arteriogram.

rupture in approximately two-thirds of the patients. They are frequently discovered when asymptomatic, but when symptoms supervene the patients generally die from rupture within a year. Aneurysms can frequently be recognized by the clinical findings of a pulsatile mass in the abdomen;

however, in obese individuals or those with smaller aneurysms, this may not be discovered. As illustrated by Case 2, there are occasionally pulsatile masses felt due to transmitted pulsations simulating aortic aneurysms.

The plain film of the abdomen will frequently outline the aneurysm by the calcium which deposits within its wall; however, many vascular surgeons, prior to repair, want to know the extent of involvement of the renal artery and iliac vessels. In both occlusive vascular disease and aneurysms of the aorta, the aortogram gives information on the progression of the disease process, effectiveness of collateral channels, and post operatively, on the patency of the vessels.

Aneurysms of branches of the aorta such as the splenic, hepatic and renal arteries, which may rupture in a significant number of cases,¹³ are also easily demonstrated.

Aortography has also been of value in the delineation of arteriovenous fistulas and in the diagnosis of polycystic disease.¹⁴ It is useful to show the blood supply of hypoplastic and ectopic kidneys. When routine pyelograms were normal in cases in which a kidney tumor was highly suspected, aortography has, on occasion, successfully demonstrated renal tumor.¹⁵ Renal arteriography has been used to differentiate renal tumors from cysts, depending upon the degree of vascularity for the diagnosis. Although there are some enthusiastic advocates of this method,¹⁶ most workers have been disappointed by its reliability for a number of reasons.^{17,18}

Many vascular tumors may become necrotic and lose their vascularity while others may grow in the wall of a cyst and show no vascularity. The vessels leading to a tumor may thrombose and show no increased vascularity. From this it is apparent that if one has a negative shadow of cyst, the diagnosis is not reliable; however if one does see the increased vascularity, the diagnosis is more certain. Since surgery is indicated with a kidney tumor in any event, the procedure

for this differentiation lacks clinical value.

Recently investigation of occlusive disease of the renal artery has become the most important application of aortography because of its association with the great hypertensive problem. Hypertensive disease can be divided into two main groups, the primary or essential hypertension in which the etiology is obscure, and the less common secondary hypertension which is the result of cardiovascular, neurologic, endocrine or renal disease. Renal hypertension can be divided into two types, that developing as a result of renal disease and, less commonly, that due to renal circulatory disturbance.

Interest in the renal circulation as a cause of hypertension began with the classic experiments of Goldblatt¹⁹ in 1934 wherein he produced hypertension by partially constricting a main renal artery in dogs. In the past few years a significant number of patients with hypertension associated with constriction of a main renal artery have improved following surgical therapy.^{20,21} Constriction of the renal artery may be classified into intrinsic and extrinsic origins. The intrinsic causes include embolism, thrombosis, aneurysm, arteriosclerotic plaques, syphilitic arteritis and fibromuscular hyperplasia.^{22,23} The extrinsic causes are compression of the renal artery by aortic aneurysm, retro-peritoneal tumor, organizing hematoma, intra-renal tumor, and hydatid cysts.

Although the discovery of diminished blood supply to one kidney does not guarantee that this lesion is the cause of the hypertension, aortography has become a very important tool in selecting the hypertensive patients for surgical attack.

Summary

For each clinical problem, we now have a choice of three methods for examination of the aorta and its branches. The translumbar aortogram is the procedure of choice for aortic visualization in cases of marked atherosclerosis and occlusive disease of the iliac and femoral vessels. The retrograde

femoral aortogram has the advantage of puncturing the artery where bleeding can be observed and controlled, and of selectively placing the catheter tip at any desired position in the aorta. We find this method the procedure of choice for visualizing the aorta for anomalies, renal artery narrowing or occlusions in hypertensive disease, and also of delineating the vascular patterns of masses in the retro-peritoneal space and kidneys. It is the best method to visualize the thoracic aorta and its branches. It is contra-indicated in atheromatous disease of the femoral and iliac vessels because of the possibility of dislodging atheromatous plaques and the difficulty of inserting a catheter through a calcified arterial wall. The intravenous method is particularly suitable for patients with arteriosclerosis and abdominal aneurysms in whom needling or catheter studies of the aorta would be hazardous. It is the method of choice for a complete occlusion of the abdominal aorta since, in this condition, good visualization of the aorta can be obtained with minimal hazard of toxic renal effect by over dosage. In thin patients visualization can be adequate to demonstrate the vascularity of kidneys and retroperitoneal structures.

Conclusion

- (1) The background of aortography has been reviewed and our own experience in 26 attempts analyzed.
- (2) The clinical problems in which aortography could be of value have been surveyed. The aorta and its branches are easily accessible to radiological examination with reasonable safety.

*Addendum

Since this series of cases was analyzed, we have had one patient develop a pulsating hematoma requiring surgical intervention two days following a femoral artery puncture.

Halpern, et al,²⁴ at the New York Hospital have studied 130 patients with the Seldinger technique without any significant complica-

tions occurring and Dotter,¹¹ after studying 110 patients without significant complications due to the procedure, suggests that they may be done as out-patient procedures.

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Drug Identification Guide

An identification guide to more than 5,000 drugs has been published by the American Medical Association. It is expected to be a valuable tool in a variety of situations, particularly in the treatment of poisoning cases due to drugs in tablet or capsule form. The guide, appearing in the December 22nd *AMA Journal*, was designed as an aid for physicians, pharmacists, hospitals, law enforcement agencies, poison control centers and others involved with drugs.

The 5,000 solid dosage drugs, representing the bulk of the nationally distributed prescription pharmaceuticals, are coded on the basis of physical appearance, such as dosage form (tablet, soft or hard gelatin capsule), size, shape, color and markings.

One of the primary reasons behind the development of the guide was the need for quick identification of drugs taken by poisoning victims so that personnel in hospital emergency rooms could treat the patient properly. In such emergencies when the drug cannot be identified through normal channels, the guide could mean the difference between life and death.

When the characteristics of an unknown drug are matched to those in the guide, the possible identity can be narrowed to one, or at most, a relatively few drugs. After the possibilities are narrowed to a few drugs, a physician would most often be able to draw

a conclusion as to its identity from his knowledge and the patient's symptoms.

In non-emergency situations, when time is not a factor, final identification could be established by chemical tests of the remaining alternatives.

The guide is expected to have many diverse uses.

A private physician, for example, could refer to it when confronted by a new patient who has been taking drugs which cannot otherwise be identified or traced.

A coroner might use it as an aid in establishing cause of death.

The guide could help police departments in handling illegal drug traffic and with such commonplace problems as identifying drugs carried by persons found unconscious on the street to determine, for instance, whether the individual is under the influence of alcohol or in a diabetic coma.

"It is hoped that every hospital, every poison control center and every police department of significant size will obtain a copy of the guide."

The guide was published in the *Journal* to assure wide distribution. In this way it will reach 195,000 subscribers immediately. An additional 25,000 copies are available at the regular cost of a single issue of the *Journal* (45 cents).

Crisis and Challenge in Public Health Today

BEN FREEDMAN, M.D.

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The medical profession must be alert to the changing needs in public health.

The Changing Panorama

IN A WORLD that is changing as fast as ours, only a state of constant vigilance can keep the public health worker attuned to the health needs of his people and to the forces that militate for or against realizing the satisfaction of those needs.

To know what the people need is just the first step in the process of rationally providing what the people want. Knowledge is the mother of the deed wisely performed. But to act wisely, our knowledge must include an understanding of the conditions that face us when we go into action. This is the second step. But action without organized spirited leadership is less fruitful and tends toward demoralization. To take and to hold the leadership in the battle for better public health—this is the third step—the critical step in changing thought into fruitful action; this is the skill that transforms the theories of medicine, of environmental hygiene, and of the social sciences into the practice of public health; this is the masterstroke by which the dreams to create become the art of creating a better life.

Let us examine, first of all, those changing facets of social life which have created the newer conditions for which we need newer programs in public health:

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Presented at Virginia Public Health Conference.

1. Decreased prevalence of communicable diseases has allowed non-communicable and chronic diseases to become more manifest and more problematic. In 1900, 40% of deaths were caused by communicable diseases. In 1960, about 1.5% of deaths were caused by communicable diseases. This has shifted the people's concern to prevention, control, and alleviation of disability resulting from non-communicable and chronic diseases.

2. Increased urbanization and the corresponding decrease in the proportion of rural population has modified the relations and character of urban to rural ecology. This has created an urgency for establishing effective programs in urban and rural planning and development.

3. Decreased death rates have resulted in an increase in the proportion of the older age-groups in the population. In 1900, 4% of population were 65 years and older. In 1960, 8.8% of population were in this age-group. During this same period, social and economic factors have increasingly separated each new generation of families from the parent generation of families. This splintering of the large family group is isolating the older folks from the children and placing them in a precarious state of existence. Combined, these factors dictate that the social, medical, and environmental problems of geriatrics be tackled anon.

4. Development of expeditious methods of transportation has decreased the isolation of people and communities, while, at the same time, increasing the isolation of migrants who do not appear to belong anywhere. Thus, the stepped-up mobility of the population has resulted in increased highway accidents, excessive exposure of migrants to the uncertainties of living, and

more frequent and more complex interrelational experiences and behavior of people.

5. Fantastically rapid advances in the technology of production is forcing a decrease in the length of the working day and week of our people, thus increasing their leisure time. In our culture, an over abundance of purposeless leisure time may become an important factor in developing behavioral problems.

6. Increased production of chemicals for everyday useful purposes has increased the pollution of the air, water, and soil, and has magnified the poison hazards in the environment.

7. Increased need and use of sources of energy have increased the exploration for and production of radioactive materials which have aggravated the problems of radiation hazards. A new look at environmental hygiene as related to radioactive contaminants has become imperative.

8. Development of newer and more efficient techniques in the use of media for mass communications and in mass production has abetted the drive toward social conformity, exposing to jeopardy originality and creativeness in every day thinking and doing. How do we keep the assets and avoid the hazards of these mass operated phenomena?

9. Increased medical knowledge and technology have eliminated the demarcation between prevention, therapeutics, and rehabilitation, and have confronted public health administrators with the alternative of orienting their services to include medical care and rehabilitation or suffer the debacle of eliminating themselves from leadership in community health affairs. The complicating, social, economic, political, and professional problems inherent in this new orientation of public health will require higher level of statesmanship and training for health officers and other professional health workers, and a reassertion of leadership in community affairs.

10. Increased cost of medical and hospital care, and the mounting shortage of per-

sonnel in medical and allied professions are posing critical problems in our ability to satisfy the increasing medical needs of all sections of our rapidly growing population. Ingenious plans and ample funds alone cannot compensate for the lack of physicians, dentists, nurses, etc. in any set-up for rendering medical services.

Change and the Traditional Public Health Program

How have the changing social conditions affected traditional public health programs, their operations and interrelationships! How are these changes effecting the development and administration of the newer community health services?

1. The urgency and glamour of public health activities in controlling and preventing the dread-diseases of the past have, to a major degree, disappeared. To prevent the reappearance of these diseases, we have developed regularized activities which rarely attract public attention. Without an impact on public appeal, public support is difficult to rally.

2. The "basic six" public health programs, i.e., vital statistics, health education, environmental hygiene, laboratory services, communicable disease control, and maternal and child hygiene which made up the pattern of public health activities for well over a quarter of a century, and which the American Medical Association declared only a decade ago to be the circumscribed limits of public health activity, have become a strait jacket obstructing our exploration of newer fields.

3. About one quarter of the counties in the United States have not seen fit to organize full-time public health departments based on the traditional public health program. These counties are sparsely populated, relatively well off economically, have a well educated population, lower death rates, and have a relatively large proportion of population in the older age group. The traditional public health program does not seem to attract them nor fit their needs.

They are interested in the problems relating to non-communicable and chronic diseases, medical care, home nursing, rehabilitation, and the like.

4. Local health department administration is still operating, in most instances, within the structure of traditional political jurisdictions such as municipalities, counties, and groups of counties instead of on the basis of metropolitan areas or areas based on economic and communication relations. Although changes in administration of this nature are extremely difficult to attain, we need to explore the possibilities for the sake of operational efficiency.

5. The need for expansion of community health programs has evoked a fear in the hearts of private practitioners concerning the development of comprehensive medical care programs in our country similar to those of European countries. Fear of government control has caused organized medicine to concentrate and direct its antagonisms against health departments (the traditional health agencies of government), and against public health physicians who are mostly government employed.

6. The greatest fear of organized medicine is in the development of community medical care services, including rehabilitation. Public health physicians, being part of the medical profession and being reluctant to violate the wishes of their confreres in private practice, have deliberately avoided entering into such programs. This is the area in which health departments have shown their greatest lag.

7. The non-medically directed official agencies, noting the vacuum created by the medical profession's abdication from its responsibilities in the field of medical care, have moved in and are rapidly taking over this area of community health services. Thus, public health physicians and their team of public health workers have been losing opportunities in gaining added experience and proficiency in the administration of these programs.

8. Legislators, having become wearily ac-

customed to organized medicine's persistent negativism, and having lost contact with the silenced public health physicians, have become easy targets for sentimental petitions of pressure groups to pass laws designed to place health programs under the administration of non-medically oriented agencies.

9. As a result of the declining leadership in community health affairs of the medical profession in general and public health physicians in particular, the financial status of health departments has suffered considerably and community health services all over the United States are becoming hopelessly fragmented. In 1950, an average of 22 types of state agencies per state, other than health departments, were operating an average of 50 health services of various types in 36 health program categories (Table 1). Most of this splintering of health services took place since the passage of the Social Security Act in 1935.

10. It has become increasingly difficult to recruit desirable types of full-time public health personnel, particularly physicians. This is not due alone to non-competitive salary ranges. To a very important degree, it is due to the lack of soul-stirring challenge of present day public health programs as they appear to young, highly trained medical graduates, engineers, and other professionals who conceive of public health as routinized regulatory activities relating to control of communicable disease. The newer types of community health services, for the most part, are associated with the much better financed non-medically directed agencies.

The Crux of the Crisis

From the time of the establishment of our country until recent years, public health agencies have served as the most favored instrumentality in our growing communities for preserving the health of the people against the threats and hazards of the times. Through these years, the principal dangers to our well-being have changed radically,

TABLE 1

TABLE SHOWING THE DEGREE OF FRAGMENTATION OF COMMUNITY HEALTH PROGRAMS BASED ON THE NUMBER OF PROGRAMS OPERATED BY AGENCIES OTHER THAN HEALTH DEPARTMENTS AND ON THE NUMBER OF AGENCIES OPERATING SUCH PROGRAMS DURING THE 1930-1950 PERIOD

	Number of State Agencies Operating (Community Health Programs)			% Increase in Community Health Program Using Number of Agencies Operating			Number of (Community Health Programs Operated by State Agencies Other Than Health Department)			% Increase in Community Health Program Using Number of Agencies Operating			Arrangement of States According to Degree of Fragmentation of Community Health Programs, Based on the Number of State Agencies Operating During the 1930-1950 Period			Arrangement of States According to Degree of Fragmentation of Community Health Programs, Based on the Number of State Agencies Operating During the 1930-1950 Period		
	1930	1940	1950	1930	1940	1950	1930	1940	1950	1930	1940	1950	1930	1940	1950	1930	1940	1950
Alabama	8	12	18	100	150	225	6	24	36	100%	400%	600%	Minnesota	Alaska	Minnesota	1	Alaska	Minnesota
Alaska	6	18	16	100	300	266	4	10	22	100	100	220	Missouri	Maine	Missouri	2	Maine	Missouri
Arizona	10	10	35	100	100	316	4	19	31	100	100	475	Montana	New Hampshire	Montana	3	New Hampshire	Montana
Arkansas	8	10	35	100	111	322	7	17	84	100	425	2100	Nebraska	Illinois	Nebraska	4	Illinois	Nebraska
California	8	10	29	100	111	322	7	28	80	100	400	1142	Nevada	Missouri	Nevada	5	Missouri	Nevada
Colorado	10	15	22	100	150	275	6	22	57	100	533	930	New Hampshire	Tennessee	New Hampshire	6	Tennessee	New Hampshire
Connecticut	10	15	22	100	150	400	7	32	59	100	314	842	Rhode Island	Virginia	Rhode Island	7	Virginia	Rhode Island
Delaware	7	10	41	100	142	585	4	13	55	100	325	1375	South Carolina	Washington	South Carolina	8	Washington	South Carolina
Florida	7	21	18	100	300	400	6	30	48	100	500	800	Tennessee	Wyoming	Tennessee	9	Wyoming	Tennessee
Georgia	6	12	18	100	200	300	3	26	49	100	866	1633	Utah	Oregon	Utah	10	Oregon	Utah
Hawaii	1	7	16	100	700	1800	0	12	41	100	300	725	Vermont	Idaho	Vermont	11	Idaho	Vermont
Idaho	10	13	16	100	128	228	4	12	29	100	455	511	Washington	Utah	Washington	12	Utah	Washington
Illinois	40	10	17	100	130	170	9	41	46	100	437	700	West Virginia	Wisconsin	West Virginia	13	Wisconsin	West Virginia
Indiana	8	15	24	100	125	300	8	35	56	100	444	711	Wisconsin	North Carolina	Wisconsin	14	North Carolina	Wisconsin
Iowa	8	15	27	100	187	338	9	40	64	100	533	933	Wyoming	Massachusetts	Wyoming	15	Massachusetts	Wyoming
Kansas	40	14	32	100	140	320	6	32	56	100	550	1950	Idaho	Massachusetts	Idaho	16	Massachusetts	Idaho
Kentucky	4	9	31	100	225	775	2	11	39	100	416	1350	Massachusetts	Ohio	Massachusetts	17	Ohio	Massachusetts
Louisiana	7	26	30	100	371	428	6	25	81	100	300	450	Michigan	New York	Michigan	18	New York	Michigan
Maine	9	11	18	100	122	200	8	24	36	100	500	880	Minnesota	Indiana	Minnesota	19	Indiana	Minnesota
Massachusetts	11	17	18	100	237	225	5	25	44	100	475	687	Montana	Iowa	Montana	20	Iowa	Montana
Michigan	8	14	29	100	200	314	6	34	66	100	566	1100	Nebraska	Idaho	Nebraska	21	Idaho	Nebraska
Minnesota	11	15	24	100	116	83	9	44	42	100	488	466	Nevada	New York	Nevada	22	New York	Nevada
Mississippi	7	14	22	100	150	366	3	14	43	100	466	1433	New York	Vermont	New York	23	Vermont	New York
Missouri	6	9	22	100	120	180	7	16	37	100	228	528	North Carolina	Nebraska	North Carolina	24	Nebraska	North Carolina
Montana	10	12	13	100	120	225	5	20	41	100	400	820	North Dakota	Ohio	North Dakota	25	Ohio	North Dakota
Nebraska	8	18	18	100	133	233	7	18	53	100	257	757	Ohio	Arizona	Ohio	26	Arizona	Ohio
Nevada	8	11	22	100	137	275	6	14	34	100	233	566	Oregon	Florida	Oregon	27	Florida	Oregon
New Jersey	11	15	24	100	136	218	9	28	42	100	311	985	South Carolina	Montana	South Carolina	28	Montana	South Carolina
New Mexico	9	12	16	100	155	177	7	25	69	100	371	985	South Dakota	Connecticut	South Dakota	29	Connecticut	South Dakota
New York	9	12	30	100	133	333	4	15	63	100	375	1575	Tennessee	Maryland	Tennessee	30	Maryland	Tennessee
North Carolina	13	11	32	100	84	248	6	33	33	100	366	722	Texas	District of Columbia	Texas	31	District of Columbia	Texas
North Dakota	9	14	26	100	155	286	6	20	38	100	333	633	Utah	Pennsylvania	Utah	32	Pennsylvania	Utah
Ohio	12	18	37	100	150	308	10	26	67	100	260	670	Virginia	Washington	Virginia	33	Washington	Virginia
Oklahoma	10	17	28	100	170	280	9	47	62	100	522	688	Washington	Kansas	Washington	34	Kansas	Washington
Oregon	7	13	31	100	185	442	4	24	65	100	600	1625	West Virginia	Kansas	West Virginia	35	Kansas	West Virginia
Pennsylvania	11	14	29	100	127	263	8	28	57	100	350	587	Wyoming	Colorado	Wyoming	36	Colorado	Wyoming
Rhode Island	9	9	16	100	100	366	8	24	72	100	300	900	Idaho	South Carolina	Idaho	37	South Carolina	Idaho
South Carolina	8	10	16	100	125	200	7	28	40	100	400	557	Michigan	New Jersey	Michigan	38	New Jersey	Michigan
South Dakota	6	10	12	100	166	350	4	11	38	100	275	950	Mississippi	West Virginia	Mississippi	39	West Virginia	Mississippi
Tennessee	9	9	21	100	183	366	5	19	35	100	380	700	Louisiana	California	Louisiana	40	California	Louisiana
Texas	6	13	29	100	216	483	4	17	79	100	471	1975	Delaware	Louisiana	Delaware	41	Louisiana	Delaware
Texas	5	11	13	100	220	260	6	14	45	100	233	750	Mississippi	Delaware	Mississippi	42	Delaware	Mississippi
Vermont	9	12	25	100	133	277	9	34	51	100	377	566	New Mexico	Mississippi	New Mexico	43	Mississippi	New Mexico
Virginia	9	12	25	100	155	200	6	25	54	100	416	900	Arkansas	Mississippi	Arkansas	44	Mississippi	Arkansas
Washington	10	14	26	100	140	260	5	36	53	100	720	1060	Delaware	Oklahoma	Delaware	45	Oklahoma	Delaware
West Virginia	12	13	17	100	108	162	8	39	50	100	457	625	Kentucky	Georgia	Kentucky	46	Georgia	Kentucky
Wyoming	8	12	13	100	150	162	7	18	41	100	257	585	Texas	Kentucky	Texas	47	Kentucky	Texas
Dist. of Columbia	4	28	19	100	700	475	3	39	27	100	1300	900	Hawaii	Arkansas	Hawaii	48	Arkansas	Hawaii
Total	412	673	1189	100	160	282	307	1263	2563	100	411	834				50		
State Average	8.24	13.19	23.31	100	160	282	6.14	24.76	50.25							51		

although the basic principles of public health by which we operate have endured with remarkable constancy, changing rather in emphasis on certain diseases and disabilities, and in the technology of application.

The crux of the challenge, then, to us in public health agencies is:

1. Whether we will have the talents and fortitude to effect those changes in program which are demanded by changing conditions and needs, and,

2. How expeditiously we will be able to accommodate the newer technology to our practices.

The challenge is imposing, indeed, and the difficulty is further compounded by the fact that agencies other than public health have already moved energetically into the arena ahead of us and are accepting this challenge with increasing frequency. It should also be clear that the crux of the crisis in which we are involved stems from the declining leadership of public health agencies and organized medicine¹ in community health affairs particularly where problems of medical care are concerned,² and the unnecessary and irrational disunity that exists between these two medical groups. This crisis is essentially the making of the medical profession, resulting from its fear of government domination of medical practice and from the misinterpretation of the physicians' role in the historical process by the leaders of organized medicine. This has been demonstrated over and over again by the way the leadership of organized medicine has acted in meeting problem after problem relating to the medical care aspects of community health needs. That the crisis has resulted in an increasing fragmentation of community health services and the decline of medical influence over existing community health services can be shown in statistical detail. (Tables 1, 2, & 3)

The crisis in which the American medical profession finds itself today begs for a new orientation. At present, a large section of the medical profession is inactive in community health affairs, and demoralized in its

outlook toward the future. Convinced that state domination of medicine is inevitable and will supervene with increasing rapidity regardless of what action is taken, these physicians see no sense in manifesting the most essential characteristic of their profession's tradition—interest and participation in developing obviously needed community health services. Unaware that adequate development of community health services is not synonymous with complete government control over all medical practice; unaware that organized medicine's strategy of the past four decades has been one of the factors that has forced state and federal government into accelerated participation in medical care and rehabilitation programs; unaware that the problems concerning health needs of the people has been misjudged by an erring medical leadership—the time has come for the medical profession to review with soul-searching objectivity the history of its past successes and failures, its present status as a community force, and its future orientation.

The past is prologue. The present is reaping the harvest—a harvest of contradictions, antagonisms, frustrations, and of lessons from bitter experience. The future can be secured by understanding these lessons, the great teacher being the problem of "community organized medical care services". What the medical fraternity does in relation to this problem will determine the future of public health and the status of American practice of medicine. The crux of the crisis in public health is, therefore, what we do about community organized medical care services.

If the medical profession takes the stand that community health services are its responsibility,³ that fragmentation of health services must end, that medical leadership is essential in all community health services, and that health departments under medical administration are the logical agencies to administer community health services, then the future will be favorable for health department development, for optimum qual-

ity of health service to the people, and for lustre, nobility, and esteem to redound to the name of the medical profession and its team of public health workers. If such a course be not pursued, then the future of health departments will be determined by

the ability of public health physicians and their team of co-workers to develop an independent leadership. This leadership will have to be strong enough to act vigorously over an extended period of time with logic, with wisdom, and with good-will to carry

TABLE 2
DISTRIBUTION* OF COMMUNITY HEALTH SERVICES AMONG STATE AGENCIES IN LOUISIANA,
ACCORDING TO TYPES OF PROGRAMS, 1930, 1940, 1950

	1930				1940						1950											
	State Board of Health	State Department of Education	T.B. Commission	Special Boards	State Board of Health	State Department of Education	State Department of Welfare	State Department of Labor	Special Boards or State Hospitals	Other State Agencies	State Board of Health	State Department of Education	State Department of Welfare	State Department of Hospitals	State Department of Agriculture	State Department of Institutions	State Department of Labor	State Department of Public Safety	State University	Wild Life and Fisheries Commission	Special Boards	Other State Agencies
Vital Statistics.....	X				X						X											
Laboratory Services.....	X				X						X				X							
Distribution of Biologicals.....	X				X						X											
General Communicable Disease Control.....	X				X	X			X		X			X	X							
Tuberculosis Control.....	X				X		X		X		X			X								
Veneral Disease Control.....	X				X				X		X			X					X			
Hookworm Control.....	X				X				X		X											
Pneumonia Control.....																						
Malaria Control.....	X				X						X		X	X								
Maternal and Child Health Services.....	X				X						X											
Maternity Hygiene.....	X				X				X		X											
Infant and Preschool Hygiene.....	X				X						X											
Midwife Control.....	X				X						X											
School Health Services.....	X	X			X	X					X			X		X			X			
Public Health Nursing.....	X				X						X											
Nutrition Services.....					X						X		X						X			
Handicapped Children's Services.....											X		X			X						
Crippled Children's Services.....					X						X		X			X						
Vocational Rehabilitation.....					X	X					X		X			X						
Dental Services.....					X		X				X		X									
Licensure for Health Reasons.....				X 3					X 3		X		X								X 3	
Cancer Control.....					X				X 1		X								X			
Heart Disease Control.....											X											
Diabetes Control.....														X								
Prevention and Treatment of Blindness.....	X				X				X 1		X	X	X	X 2					X			
Mental Health Services.....	X								X 1		X	X	X	X 2					X		X	
Arthritis and Rheumatism Services and Hygiene of Aging.....																						
Human Blood Program.....											X											
General Medical Care.....					X				X 2	X		X	X	X 2			X	X	X			X 1
Accident Prevention.....											X	X			X				X			X 2
Mosquito and Other Insect Control.....	X				X						X				X							
Pest Mosquito Control.....					X						X											
Rodent Control.....	X				X						X				X							
Ice Industry Hygiene.....	X				X						X											
Bottled Water Control.....	X				X						X											
Control of Garbage: Collection and Disposal.....	X				X						X				X				X	X	X	
Water Pollution Control.....					X						X								X	X	X	
Control of Water Supplies.....	X				X						X								X			
Control of Sewage Disposal.....	X				X						X								X			
Smoke, Fumes, and Odor Control.....	X				X						X											
Hygiene of Housing.....										X	X											
Plumbing Control.....	X				X						X										X	
Control of Hotels, Camps, Bathing Places, etc.....	X				X				X		X										X	
Food and Drug Control.....	X				X						X										X	
Shellfish Sanitation.....	X				X						X									X		
Milk Sanitation.....	X				X						X				X				X			
Occupational Health Services.....											X						X					X
Industrial Hygiene.....								X			X						X					X
Swimming Pool Control.....	X				X						X											
Health Education.....	X	X			X	X					X	X	X	X	X	X		X	X		X 2	X 1
Health Services for Migratory Labor.....	X																X					
Workingmen's Compensation.....								X														
Alcoholism: Control and Rehabilitation.....																					X	
Hospitalization: General.....				X					X					X							X	
Hospitalization: Tuberculosis.....	X		X		X				X					X							X 1	
Hospitalization: Mental.....				X 1					X 2					X 3								
Expansion and Improvement of Hospitals, Health Center, and Nursing Homes.....											X			X							X	
Research.....	X				X					X	X			X			X		X			

*SOURCE REFERENCES: Health Departments of States and Provinces of the United States and Canada, Public Health Bulletin No. 184 (Revised), 1932. Distribution of Health Services in the Structure of State Government, Public Health Bulletin No. 184 (Third Edition), 1943. Distribution of Health Services in the Structure of State Government 1950, Public Health Service Publication No. 184, 1954. Biennial Reports Louisiana State Board of Health.

1. Two separate agencies.
2. Three separate agencies.
3. More than three separate agencies.

a large section of the medical profession with it into the future. Public health leadership will, then, be placed in a position of protecting the medical profession from its self-destructive behavior.

Critical Status of the Medical Profession

Since physicians have been the traditional leaders in public health administration, they are primarily responsible for the decline in leadership of health departments. This, of course, does not altogether absolve other categories of public health workers from

responsibility for this decline. It merely dulls the sharpness of the pang. There is little evidence that engineers, sanitarians, nurses, or health educators, as organized groups have made any special efforts to strengthen the position of health departments. A tendency, however, is apparent that each group smarts under medical supervision, justifying their attitude by the rationalization that the physician is ill-equipped with the theory and practice of their particular discipline to serve competently as overall director. Such reasoning, of

TABLE 3

TABLE SHOWING THE RATIOS OF THE NUMBER OF PUBLIC HEALTH PROGRAM CATEGORIES PARTICIPATED IN BY STATE GOVERNMENT TO THE NUMBER OF HEALTH PROGRAMS IN THE VARIOUS PROGRAM CATEGORIES OPERATED BY THE STATE AGENCIES, THE PERCENTAGES OF THESE PROGRAM CATEGORIES IN WHICH EACH STATE HEALTH DEPARTMENT PARTICIPATED, AND THE PERCENTAGES OF THESE PROGRAM CATEGORIES IN WHICH EACH STATE HEALTH DEPARTMENT ADMINISTERED PROGRAMS EXCLUSIVELY, 1930, 1940 AND 1950.

	Ratios of the Number of Public Health Program Categories Participated in by State Government in Each State to the Number of Health Programs in the Various Program Categories Operated by the State Agencies of that State.			Percentage of the Public Health Program Categories in Which Each State Health Department Participated.			Percentage of the Public Health Program Categories in Which Each State Health Department Administered Programs Exclusively.		
	1930	1940	1950	1930	1940	1950	1930	1940	1950
Alabama.....	1:1.08	1:1.5	1:2.0	83%	79%	87%	75%	44%	32%
Alaska.....		1:1.2	1:1.7		85%	97%		63%	56%
Arizona.....	1:1.05	1:1.4	1:1.8	84%	62%	94%	79%	33%	48%
Arkansas.....	1:1.04	1:1.4	1:3.4	86%	74%	85%	72%	41%	6%
California.....	1:1.04	1:1.6	1:3.1	74%	79%	86%	69%	41%	8%
Colorado.....	1:1.05	1:1.7	1:2.4	72%	78%	80%	66%	34%	23%
Connecticut.....	1:1.04	1:1.5	1:2.6	78%	83%	91%	74%	38%	25%
Delaware.....	1:1.07	1:1.2	1:2.4	85%	80%	85%	84%	64%	31%
Florida.....	1:1.04	1:1.8	1:2.3	80%	83%	81%	76%	36%	30%
Georgia.....	1:1.06	1:1.6	1:2.4	88%	78%	84%	76%	47%	32%
Hawaii.....	1:1.00	1:1.3	1:2.2	100%	91%	90%	100%	71%	31%
Idaho.....	1:1.11	1:1.4	1:1.7	89%	88%	88%	77%	60%	53%
Illinois.....	1:1.08	1:2.0	1:2.3	69%	75%	88%	61%	34%	27%
Indiana.....	1:1.08	1:1.8	1:2.4	76%	78%	80%	68%	36%	14%
Iowa.....	1:1.05	1:2.0	1:2.5	62%	75%	71%	57%	22%	14%
Kansas.....	1:1.07	1:1.8	1:2.4	84%	76%	79%	77%	33%	17%
Kentucky.....	1:1.04	1:1.2	1:2.1	96%	86%	84%	92%	62%	42%
Louisiana.....	1:1.07	1:1.5	1:3.3	84%	76%	88%	77%	41%	21%
Maine.....	1:1.04	1:1.6	1:2.1	69%	71%	90%	68%	35%	42%
Maryland.....	1:1.07	1:1.6	1:2.1	88%	77%	85%	80%	48%	26%
Massachusetts.....	1:1.08	1:1.9	1:2.5	70%	79%	88%	68%	23%	28%
Michigan.....	1:1.05	1:1.8	1:2.8	75%	75%	82%	70%	22%	20%
Minnesota.....	1:1.16	1:2.1	1:2.1	68%	76%	75%	62%	17%	22%
Mississippi.....	1:1.08	1:1.3	1:2.4	96%	84%	93%	88%	59%	33%
Missouri.....	1:1.07	1:1.4	1:2.1	81%	78%	93%	70%	53%	35%
Montana.....	1:1.05	1:1.5	1:2.2	79%	75%	87%	73%	43%	42%
Nebraska.....	1:1.00	1:1.4	1:2.5	66%	65%	77%	66%	34%	22%
Nevada.....	1:1.16	1:1.3	1:1.9	66%	82%	90%	50%	60%	42%
New Hampshire.....	1:1.07	1:1.6	1:2.2	74%	71%	87%	66%	31%	22%
New Jersey.....	1:1.04	1:1.5	1:2.9	76%	72%	88%	72%	30%	17%
New Mexico.....	1:1.09	1:1.3	1:2.8	90%	78%	85%	76%	50%	24%
New York.....	1:1.15	1:1.8	1:2.9	81%	81%	94%	69%	30%	27%
North Carolina.....	1:1.09	1:1.5	1:2.0	81%	79%	80%	71%	38%	32%
North Dakota.....	1:1.05	1:1.6	1:2.8	52%	69%	85%	47%	34%	23%
Ohio.....	1:1.04	1:2.2	1:2.6	68%	72%	72%	64%	24%	15%
Oklahoma.....	1:1.11	1:1.5	1:2.7	89%	75%	82%	78%	43%	6%
Oregon.....	1:1.04	1:1.6	1:2.2	69%	72%	79%	61%	37%	24%
Pennsylvania.....	1:1.11	1:1.6	1:3.1	81%	84%	90%	70%	47%	24%
Rhode Island.....	1:1.04	1:1.8	1:2.2	75%	86%	90%	71%	30%	42%
South Carolina.....	1:1.04	1:1.2	1:2.2	89%	78%	93%	85%	67%	35%
South Dakota.....	1:1.05	1:1.5	1:2.0	79%	75%	86%	73%	37%	46%
Tennessee.....	1:1.05	1:1.6	1:2.2	68%	80%	87%	58%	48%	26%
Texas.....	1:1.04	1:1.3	1:3.4	88%	83%	90%	84%	53%	9%
Utah.....	1:1.00	1:1.3	1:2.0	76%	76%	87%	76%	48%	37%
Vermont.....	1:1.10	1:1.5	1:2.3	80%	82%	97%	70%	43%	27%
Virginia.....	1:1.11	1:1.9	1:2.4	77%	81%	82%	69%	22%	24%
Washington.....	1:1.09	1:1.5	1:2.6	76%	70%	90%	66%	33%	19%
West Virginia.....	1:1.07	1:2.2	1:2.8	88%	77%	85%	77%	19%	25%
Wisconsin.....	1:1.07	1:1.9	1:2.4	78%	83%	85%	70%	27%	14%
Wyoming.....	1:1.05	1:1.4	1:2.2	66%	69%	79%	61%	46%	34%
District of Columbia.....	1:1.00	1:2.1	1:1.9	87%	84%	96%	87%	22%	40%
All States.....	1:1.06	1:1.6	1:2.4	79%	78%	86%	72%	40%	27%

*State Health Department as used here means also local health department cooperation.

course, is thoroughly misguided. Community health operations need a unifying direction for efficiency and effectiveness. This should be the function of those practitioners who are most broadly trained in that discipline which encompasses in its sphere of knowledge the most comprehensive understanding of the nature of health and disease. This discipline is medicine, the generic practitioners of which are physicians. Nursing is a specialized and restricted aspect of the application of medical science to the care of the individual and family. Engineering in hygiene is merely a very specialized and restricted application of engineering to the health field. The same is true of any other discipline which is not essentially health rooted, health structured, and health motivated as is medicine. Public Health is based on the principles of health as developed by medical science and applied in the most comprehensive manner to community life, utilizing the aid of other disciplines to accomplish its task. The physician, therefore, is professionally equipped to be in the pivotal position on the public health team.

Knowledge Primarily, Not Concern Alone, Gives License to Practice

Health is everyone's concern, and everybody, knowingly or unknowingly, participates in its attainment or its impairment. The same can be said in relation to every basic community need. But concern and interest are not the only qualities required to render health services competently. Knowledge and technology are the essentials for competency, and these are possible only by special education and training. To provide for the health needs of a community, medical science and its environmental counterpart, ecological hygiene, must be applied. Health departments under medical administration are the agencies primarily organized to use these skills and to render these services. Nevertheless, it is proper and desirable that non-medical social service agencies cooperate in community health services; for example, education agencies should make the teaching of the principles of health an essential re-

quirement in their curricula, and, similarly, welfare agencies should provide consultation for guiding their clientele in obtaining health services and in maintaining good health. Thus, in the process of carrying out the primary function for which each social service agency is established, such agency also has the additional responsibility of orienting its activities to support the attainment of optimum health for its clientele and for the community in which it operates. This inter-related participation in the broad field of human needs is the legitimate concern of every social service agency. This is not fragmentation of community health services, and does not lead to fragmentation. But when an agency, whose primary function and orientation are in a field other than health, is forced into health service administration, or competes for and is successful in acquiring jurisdiction of programs in which the primary function is the rendering of health services, this is fragmentation, and the problem of competency in rendering such service must be investigated if the public weal be our concern. Therefore, where health is involved, it is everyone's concern, but it is primarily the responsibility and competency of the medical profession.

Fragmentation is an evil—a serious maladministration of government.

Where Blindness May Lead

Lest community medical care services slip completely out of the influence of those best equipped to plan, administer, and render such services, it would be well if physicians took note that contrary to the past supporting actions of organized medicine, the evidence shows that:

1. Instead of having stopped health insurance programs by opposition to government sponsored plans, health insurance programs of a voluntary* nature have mushroomed all over the country.

*Note: The AMA claims never to have been opposed to voluntary health insurance. But this only appears to be true in so far as formal pronouncements are concerned. Before 1936, its attitude was definitely hostile to any kind of health insurance.

2. Instead of having stopped group practice because it increased the number of salaried physicians who had unfortunately been stigmatized as associated with socialized medicine, group practice has blossomed forth like magic everywhere.

3. Instead of having restrained hospitals from succumbing to the "mechanization" of the "socializing" influence of group health insurance plans, hospitals have banded together under strong lay-dominated leadership, accepting and even encouraging group hospital insurance plans.

4. Instead of having prevented government sponsored medical care programs by fighting public health, organized medicine has driven various public health programs including medical care into lay-directed public agencies whose sympathies for the medical profession are not particularly strong.

Thus, public health physicians who were in strategic positions to administer and guide the inevitable growth of these programs and who represent the only force in government that could keep these programs under the aegis of the medical profession were separated from this opportunity to serve.

Cooperation to the Last Breath

"Team work" or the "team approach" is unquestionably the essence of good administration in public service operations. Health workers are nourished, trained, and weaned into professional life with such rubrics. The definition of team work should be obvious. It is a group of two or more individuals who cooperate to accomplish a common goal. To the credit of health workers, most of them usually practice the team approach. They practice it amongst themselves and with other agencies. The health department personnel, therefore, work closely with personnel of the Departments of Welfare, Education, and other social service agencies, official and voluntary, each supposedly working in its own field and together covering as broad a field of social services as possible. The organization of the team is determined by

the nature of the goal and the type of society in which the team operates. The nature of the goal of the public health team is to attain and maintain optimum health for the people.

Granting the willingness to cooperate, the cooperation of agencies for the purpose of coordinating interrelated programs is effective depending on the number of agencies involved, and the number of similar (or duplicate) services operated by these agencies. Thus, the greater the number of agencies involved in the teamwork operation, the more complicated becomes the task and the more difficult to accomplish it. Likewise, the greater the number of similar (or duplicate) services operated by the agencies seeking to coordinate operations, the greater becomes the duplication of administrative activities and of efforts to expand in the same direction, the greater becomes the frequency of situations arising to aggravate competitive antagonisms in obtaining funds for similar programs, the greater becomes the impetus for program fragmentation, and the greater becomes the waste of funds, efforts, and operations.

Before the passage of the Social Security Law in 1935, community health service fragmentation was at a minimum, and therefore cooperation of health departments with other state agencies was a simple procedure. This was certainly true in 1930 when the average number of health programs operated per state health department was 18, while the average number health programs operated per state by other state agencies was only six. But by 1940, the picture had changed radically so that the problem of developing a mechanism of cooperation had become quite a complicated task. During this decade, although the average number of programs operated per state health department increased only from 18 to 24, the average number of health programs operated by other state agencies in each state increased from six to 25. Then, after another decade, the problem of developing a cooperative mechanism for health

services had reached a level of absurdity due to the extremity of program fragmentation. Although the average number of programs operated per state health department increased only from 24 in 1940 to 28 in 1950, the average number of health programs operated per state by other state agencies increased from 25 to 50.

The decline of state health department jurisdiction in the field of health and the insinuation of non-medically oriented state agencies into this field is further illustrated by the fact that in 1930 state health departments operated exclusively in an average of 17 public health program areas, while by 1940, this decreased to 12, and by 1950, to nine.

What was the picture of fragmentation in Virginia during this period? It was similar to what was going on all over the country. In 1930, eight state agencies other than the health department operated nine community health programs. In 1940, 11 such agencies operated 34 programs, and in 1950, 24 such agencies operated 51 programs.

There is much logical force in the principle of integrating or coordinating all social services. There is an optimum method of accomplishing this for each situation. What has essentially been happening in our country is neither integration, nor coordination, nor cooperation, but an accelerated splintering of health services. The policies relating to federal grants to states has been reinforcing the splintering of services on a state level. The behavior of the Department of Health, Education, and Welfare has not been helpful in this problem.

In view of this process of rapidly increasing fragmentation of health services which has been abetted by the decreasing influence of health departments and the increasing aggressiveness of non-medically directed agencies to control community health services, what should be the attitude of health departments toward cooperation? Are we to continue to cooperate without manifesting distress and protest in the face of what is becoming almost a cynical campaign of

the non-medical agencies to take over the operation of community health services? Demoralized public health workers will do just this. Yet not to cooperate with these agencies in services which they already administer would be an affront against the public. Obviously, then, the course to take is to try to cooperate as effectively as is possible in the present jungle of fragmented services, while at the same time taking the initiative to arrest the fragmenting process with the view of eventually restoring order and unity in community health program administration.

The Challenge

In a democratic country like ours, the wishes of the people eventually become woven into the fabric of the laws, practices, and traditions of government. When yellow fever was the scourge of American life in the 18th and 19th centuries, the people demanded and got quarantine laws and boards of health. Similarly, when the people saw the logic of vaccination, of safe water supplies, of sanitary disposal of wastes, of food control, and of maternal and child hygiene services, these became the official programs of health departments. Today, there is popular support for tackling various health problems such as are related to cancer, diabetes, heart disease, mental hygiene, hay fever, asthma, urban and rural planning and development, safety, aging, juvenile delinquency, nephritis, housing and slum clearance, and a host of others. Popular support for solution of these problems is so great that millions of dollars are available for research and for program development. Health departments have been slow in availing themselves of these research funds, and slow in initiating substantial programs in these newer areas of public interest.

The over-all challenge to public health workers therefore consists of:

1. Expeditiously putting into practice the newer health knowledge as it develops;
2. Helping to create new knowledge through research for solving practical and pertinent health problems;

3. Taking the leadership in unifying, as far as is practical, the administration of community health services under competent medically oriented direction.

The Challenge to the Health Officer consists in whether he will be able:

1. To develop adequate methods for evaluating the effectiveness of community health services, for pinpointing community health needs and problems and their causes, and for applying expeditiously the growing body of health knowledge to better community living, directing our attentions particularly, at the present time, to the chronic diseases, physical, psychosomatic, and behavioral.

2. To integrate sociological theory with biological and physical theory as the scientific basis for public health practice.

3. To formulate a curriculum of study and training that will lead to the development of a breed of health officers who will be able to take and hold the leadership in the forging of the public health program of the future.

4. To help stimulate the expansion of medical schools so that an adequate number of physicians will become available to take care of the changing health needs of the expanding population.

5. To re-establish research as a basic activity of health departments, particularly paying attention to the solution of practical problems of epidemiology and administration.

6. To take the initiative in the medical profession to overcome the handicapping heritage left by organized medicine's misguided negativism toward the development of community health services in meeting the changing needs of the people, and to take the leadership in reducing the fragmentation of community health services and in relocating these services under medical administration.

7. To develop abilities and methods for enlisting and educating the political and economic leaders to participate in planning

and supporting far-sighted programs for social improvement of community life.

8. To furnish the leadership for coordinating the activities of the various agencies who operate community health programs or other social services in order to utilize all such available services in the most efficient and effective manner for community well-being.

9. To develop knowledge and skills required for leadership in programs of urban and rural planning and development.

The Challenge to the Public Health Nurse consists in whether she will be able:

1. To formulate a curriculum of study and training which will produce public health nurses thoroughly prepared for the wide range of nursing activities inherent in the comprehensive community health programs of the future.

2. To devise effective means for distributing more widely to parents the growing knowledge of maternal and child care, to include such phases as:

- a. Growth and development (physical, psychological, and social) of children.
- b. Accident prevention.
- c. Juvenile delinquency prevention.

3. To develop abilities in child guidance and family counseling, and in group techniques for conducting mental hygiene guidance.

4. To take a leadership role in participating in community affairs relating to the development of programs for bedside nursing, for improvement of the care of the aged, for control of chronic diseases, and for physical and mental rehabilitation.

The Challenge to Sanitarians and Engineers consists in whether they will be able:

1. To re-examine sanitary practices which had been formulated in the past from presumptive evidence or from lack of technological skill, and to bring a newer logic to the practice of environmental hygiene. This

requires a renaissance in sanitary research by sanitarians and public health engineers.

2. To take leadership in solving the problems in waste disposal including radio-active and chemical wastes disposed of into the air, the sewage, the water, and onto the ground, and in solving the problems of fresh water supplies, and the safety of animal and vegetable foods from radiation hazards.

3. To take leadership in safety programs, such as relate to housing, neighborhood environment, highways, insecticidal and herbicidal practices and other poisoning hazards.

4. To devise adequate means of sanitary control of food, processed and distributed by the newer developing techniques, and devise methods for reducing the excessive number of food-borne outbreaks.

5. To take the lead in organizing the co-operative efforts of other agencies, such as highway departments and housing authorities, in controlling such widespread disabilities as hay fever and asthma caused by pollenosis, slums and substandard housing, and accidents.

6. To help develop the knowledge concerning the meteorological and socio-en-

vironmental factors related to chronic disabilities, and to devise procedures for control.

7. To take the initiative in helping to solve the problem of fragmentation of sanitation programs.

We, in public health, must start marching forward at a rapid pace just to keep abreast of the times. If we fail in this, the people and their public health needs will pull farther ahead of us and leave us isolated, distinguished, and serenely suspended in the limbo of past history.

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3. In 1934, the AMA adopted ten principles as bases for conduct of any social experiment that may be contemplated by local or state medical societies. Chief among these principles were: "All features of medical service in any method of medical practice should be under the control of the medical profession." *JAMA* 102: No. 26, June 30, 1934, pp. 2200-2201.

Box 630

New Orleans, Louisiana

New Books

W. B. Saunders Company features the following recent books in their full page advertisement appearing elsewhere in this issue:

1963 CURRENT THERAPY—Today's best treatments—ranging from management of conditions causing enuresis to treatment of coma with analeptic drugs.

Bockus—GASTROENTEROLOGY—An eminent 3-volume work! Volume I, on the Esophagus and Stomach, just published.

Meares—MANAGEMENT OF THE ANXIOUS PATIENT—Tells you from what sources anxiety in a patient may spring and how it can be resolved.

Diagnostic Laboratory Medicine

The Chemical Tests for the Detection of Minimal Amounts of Blood ("Occult Blood") in Feces

While no problem exists in the detection by doctors, nurses or even patients of large amounts of blood in feces, the demonstration of the existence of small amounts of blood ("occult blood"—a term introduced into clinical medicine in 1901 by the gastroenterologist, Professor Ismar Boas) is achieved by means of laboratory procedures.

These procedures can be classified as follows:

1. Microscopic examination of feces for red blood cells.
2. Spectroscopic examination of feces for blood.
3. Chemical examination of feces for blood.

1. The microscopic examination of feces for red blood cells as a sign of bleeding is limited. Only blood loss from the lower gastrointestinal tract, hemorrhoids, sigmoid lesions, etc., may be detected by this method. Red blood cells from the upper gastrointestinal tract are destroyed before they reach the rectum.

2. Spectroscopy—While biochemists believe that this method has great possibilities, the detection of blood after it has been broken down is difficult. Spectroscopy is not a simple laboratory procedure and requires precise training for the differential laboratory diagnosis of pigments having bands close to blood, for example chlorophyll.

3. The chemical examination is the most practical and simple approach to the detection of blood in feces. The first chemical test for the detection of occult blood, the hemin test (Teichmann) is not a reliable procedure and gave way to the so-called "peroxidase-like activity" tests for occult blood.

The principle of these tests is as follows:

Blood cells even when destroyed possess a "peroxidase-like activity". This activity is used to decompose a solution of 3% hydrogen peroxide and the liberated oxygen will oxidize a chemical substance in the reagent to produce a color. Thus, appearance of color is a positive test, while the absence of color constitutes a negative test.

In general, the problem of false positive tests results when animal and vegetable peroxidases or a few chemicals such as iodides and bromides are present in feces. False negative tests can result when the amount of blood is below the sensitivity of the tests and when reducing agents such as large amounts of Vitamin C are present in feces.

Several peroxidase-like activity tests for occult blood have been developed. The most widely known ones are: (1) Guaiac test; (2) Benzidine test; (3) Orthotolidine test; (4) Phenolphthalein (Meyer's) test. The Meyer's test is an over-sensitive test for clinical use. The most common test used by clinicians is the Guaiac test; a few prefer the Benzidine test. One objection to the latter has been that it was too sensitive for clinical use. While this was true with the original methods using benzidine base, a benzidine test of decreased sensitivity was introduced by J. P. Gregersen in 1919 and today reduced sensitivity methods are possible using 1% Benzidine di-hydrochloride solution.

The Orthotolidine method was re-introduced as a simple method for the detection of occult blood by the use of a tablet (Hematest by Ames).

In evaluation of the above four mentioned procedures, following conclusions were reached. Using a solution of blood in water the sensitivity of the four procedures was as follows:

Guaiac test	1:10,000
1% Benzidine di-hydrochloride test	1:10,000
Orthotolidine test	1:40,000
Meyer's (Phenolphthalein)	1:100,000

In a series of 178 normal subjects, the writer had 50 false positive results, of which 42 were Meyer's and Orthotolidine tests. There were only one false positive Benzidine and Meyer's test, and four false positive Guaiac tests. Three individuals showed positive results in three out of four of the above tests.

Of 162 patients, we had 38 false positive tests. Of these 36 showed false positive Meyer's and Orthotolidine tests and two false positive Benzidine and Meyer's tests. We have shown that the 1% Benzidine di-hydrochloride method is equal in sensitivity to the Guaiac test, but in addition having the following advantages over it:

- (1) Benzidine di-hydrochloride is a chemically defined water soluble compound. Guaiac gum, a complex mixture, is soluble in 95% alcohol.
- (2) Guaiac reacts with iron "in vitro" and occasionally positive reactions may occur when the patient is receiving iron. Benzidine, however, does not react with iron.

The discrepancy in the literature concerning Guaiac and its reaction with iron lies probably in the fact that iron in the stool is in the form of iron sulfide, a highly insoluble compound in water but soluble in strong acids. The variation in the acidity of the fecal suspensions may account for the reports of positive results. Detailed information and references are available from the author.

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A Little Neurosis A Good Thing

Some so-called neurotic reactions may act as a safety valve in enabling a person to keep his emotional equilibrium, according to Dr. David Seegal, New York City. Writing in the *Journal of the American Medical Association* (Dec. 8th), he said:

"It may not be too far fetched to defend the thesis that a little neurosis may be a valuable asset, even though a heavy one may be hard to take. More than one psychiatrist, essayist, biographer, and novelist has emphasized that man must be extraordinary adaptable to emerge unscathed from the myriad of emotional challenges, trapdoors, or even roadblocks liberally strewn on the path of human experience. For many years these stressful periods were considered the cause of a multitude of personality difficulties and

even of some organic disease, but today it is not unusual to hear the voices of some who assert the value of stress in the fulfillment of the individual.

"Some so-termed neurotic reaction (to assign responsibility to others for one's own failings, for example) may not often be attractive qualities and used to excess may be alienating to others and require psychiatric assistance. But in subtle or moderate expression, these 'neurotic' characteristics may be a form of natural psychological homeostasis, acting as a 'safety-valve' for the individual to maintain a reasonable emotional equilibrium and a defense and repair of what otherwise might be a lacerated, unhealing ego."

Dr. Seegal is affiliated with the Columbia University Research Service, Goldwater Memorial Hospital.

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Ecology of Viruses

The word ecology is derived from a Greek word meaning house. The term may be loosely defined as the study of an organism in its relationship to the total environment. A virus may be regarded as an agent of disease and its ecological habitat as the human or animal host in conjunction with other environmental elements.

The expansion of virology since the Nobel prize winners Enders, Robbins, and Weller demonstrated the ease with which tissue culture may be used has been phenomenal. One disturbing element, however, is the inability of virologists to agree upon the nomenclature of the many new viruses which have been isolated. Much fruitless discussion and writing have been expended on this subject.

The cyclical nature of some virus diseases has been shown to occur with characteristic regularity. Influenza, for instance, when caused by an A strain virus occurs every 2-3 years, while the B strain virus produces outbreaks at 4-6 yearly intervals. Infectious hepatitis in this country appears to reach a peak every 7-10 years. It is interesting to note that outbreaks of pleurodynia occurred in Virginia in 1888, 1923, 1934 and 1961. Although this is not a regular pattern, there may well be a cycle of Coxsackie B Virus infections in Virginia.

The seasonal distribution of virus diseases is still largely unexplained. The well-known infections like measles and the common cold which occur in winter and spring contrast with the enterovirus infections, such as poliomyelitis, which are commoner in the summer and fall. Some pioneer work which has been done points to the possible effect of climate on this seasonal distribution of viruses, but other environmental factors, such

as congregation within buildings in cold weather, may enter into the pattern.

The increased contamination of water supplies by sewage is of concern to medical authorities throughout the country. Certain viruses are known to possess properties which enable them to withstand the treatment of water supplies currently used by most municipalities. A dramatic demonstration of this fact was seen in New Delhi, India, in 1955 when 28,000 cases of infectious hepatitis were traced to a water supply which was apparently adequately controlled. The occurrence of cases of hepatitis associated with eating raw oysters was shown in the United States recently. In addition the enteroviruses are known to resist standard water supply sanitation measures, although transmission of poliomyelitis in this manner is unlikely.

The effect of nutrition upon viral diseases is practically an unknown quantity. There is some indication that malnutrition may help the individual to resist virus diseases, presumably because of the lack of necessary cell metabolites. This fact was noted in prisoners of war during World War II, who, despite emaciation, appeared to be able to withstand virus infections with more success than their better-fed liberators.

In 1941 an Australian ophthalmologist brought to light the connection of congenital deformities with German measles during the first three months of pregnancy. Similar conclusions were drawn by some workers during the Asian influenza pandemic of 1957-58, although the data presented were by no means as clear as those in the original Australian study. The role of transplacental infections with viruses in the production of congenital deformities is still unclear, as is

the possibility of latent virus infections in youth determining the onset of degenerative diseases in old age.

Besides the endemic virus diseases which are encountered in everyday practice, the importation of exotic infections is a constant threat. The production of outbreaks of smallpox in Europe during 1962 and the smallpox case which travelled through the United States en route to Canada are proof of this. It should be noted that approved certificates of vaccination had been issued to some of the persons who developed the disease in transit.

It should be obvious that the control of virus diseases must be looked at from an ecological standpoint. The Utopian approach of complete immunization is never likely to be realized as the large number of viruses and their capacity to mutate will preclude the production of stable and current vaccines. Since 1796, when Edward Jenner brought the practice of smallpox vaccination to the notice of the world, many virologists have looked to vaccines as the ultimate method of control. The place of viruses in nature, however, must be remembered.

It is entirely possible that methods of chemotherapy will become available as the basic knowledge of the virus-cell relationship unfolds. The study of interferon has stimulated research in this field and the possibility that this is the key to the chemical control

of human virus diseases must be considered. At present, the best that can be done is to immunize selected segments of the population against a few viruses, and the total population against even fewer. In any event, we can be sure that viruses will continue to plague mankind for many years to come.

It must be remembered that immunization itself is not without danger as was demonstrated by the adverse effects of both poliomyelitis vaccines. Rabies and smallpox vaccines also may produce untoward reactions in the recipient.

The investigation of individual cases and outbreaks is the only way in which some of the mysteries of viral diseases will be solved. Virginia is particularly suited to this type of work, as facilities are available for examination of specimens in the State Health Department laboratory through the local health departments which cover every county and city in the State. Specimens for viral isolation must be maintained at freezing point or below until examined, while sera, both acute and convalescent, should only be refrigerated. The central laboratory of the State Health Department is equipped to do almost all types of virus work. On occasion, however, the services of the Communicable Disease Center of the United States Public Health Service are enlisted, thereby enabling the practitioners in the State to use one of the best research centers in the world.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE
DISEASE CONTROL

	Dec. 1962	Dec. 1961	Jan.- Dec. 1962	Jan.- Dec. 1961
Brucellosis -----	0	1	13	18
Diphtheria -----	5	2	19	13
Hepatitis -----	84	146	1177	1558
Measles -----	289	504	9682	12388
Meningococcal Infections --	9	4	77	44
Aseptic Meningitis -----	2	2	47	86
Poliomyelitis -----	0	2	9	14
Rabies (In Animals) -----	3	8	135	191
Rocky Mt. Spotted Fever ---	0	0	45	49
Streptococcal Infections ---	875	520	7509	6231
Tularemia -----	3	6	17	23
Typhoid Fever -----	1	0	21	21

EDNA M. LANTZ
JAMES B. FUNKHOUSER, M.D.

Statistics Show a Shift from Child Guidance

It is generally believed that mental hygiene clinics had their origin in the community psychiatric clinic established at the Institute for Juvenile Research at Chicago in 1909. However, the psychiatric clinics as a social institution did not develop until the 1920's with the establishment of demonstration clinics sponsored by the Commonwealth Fund. Indeed, two of the mental

The American Orthopsychiatric Association was founded in 1927, stemming from the discontent of a small group of psychiatrists with the relatively barren state of institutional care for mental illness at that time and from their desire for professional association with psychologists, social workers and pediatricians who, with them, were vitally concerned with the problems of delinquent behavior and with the varied emotional and social problems of children. In

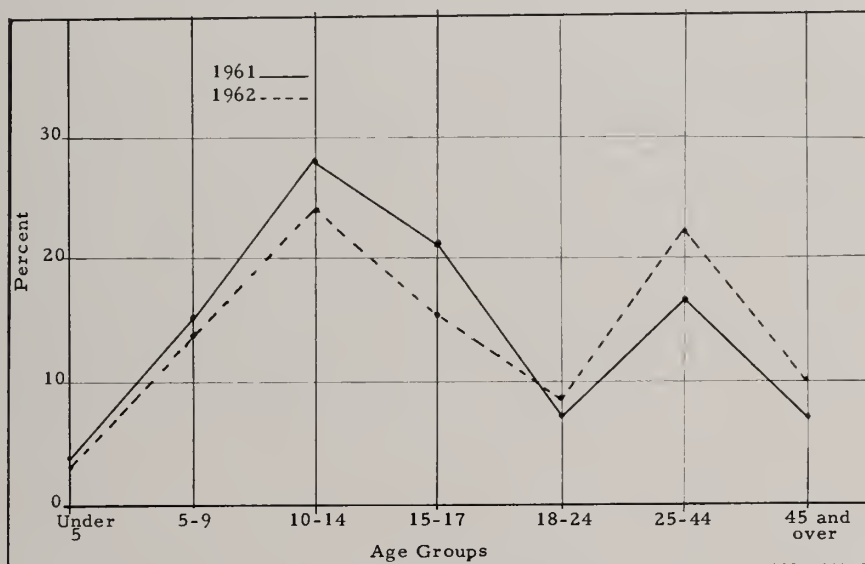


Chart No. I - Percentage comparison of distribution of age groups for terminated cases from Virginia's Mental Hygiene Clinics for fiscal years 1961 and 1962.

hygiene clinics in Virginia, the Memorial Guidance Clinic in Richmond in 1924 and the Norfolk Mental Health Center in the early 1920's had their origin under this auspice.

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Approved for publication by Commissioner, Department Mental Hygiene and Hospitals.

short, mental hygiene began as a child guidance movement.

Even at the present time approximately two-thirds of the patients seen in Virginia mental hygiene clinics are 18 years of age and under but recently in Virginia (and elsewhere) a trend is developing which may have some significance. It is noticeable that there is a shift toward the older age group. A study of the reports received in this office for the year ending June, 1961, and June,

1962, show the age group of children under 18 decreased from 66% in 1961 to 62%. There was a corresponding increase in the 18 and over age group from 34% in 1961 to 38% in the following year. This not only applies to the age at "admissions" to service

Those from 18 to 24 years increased by 2%; 25 to 44 years of age increased by about 6%, and 45 years and over increased by about 3%. The peak load of cases terminated were in the 10 to 14 year age group and in the 25 to 44 year old age group. The

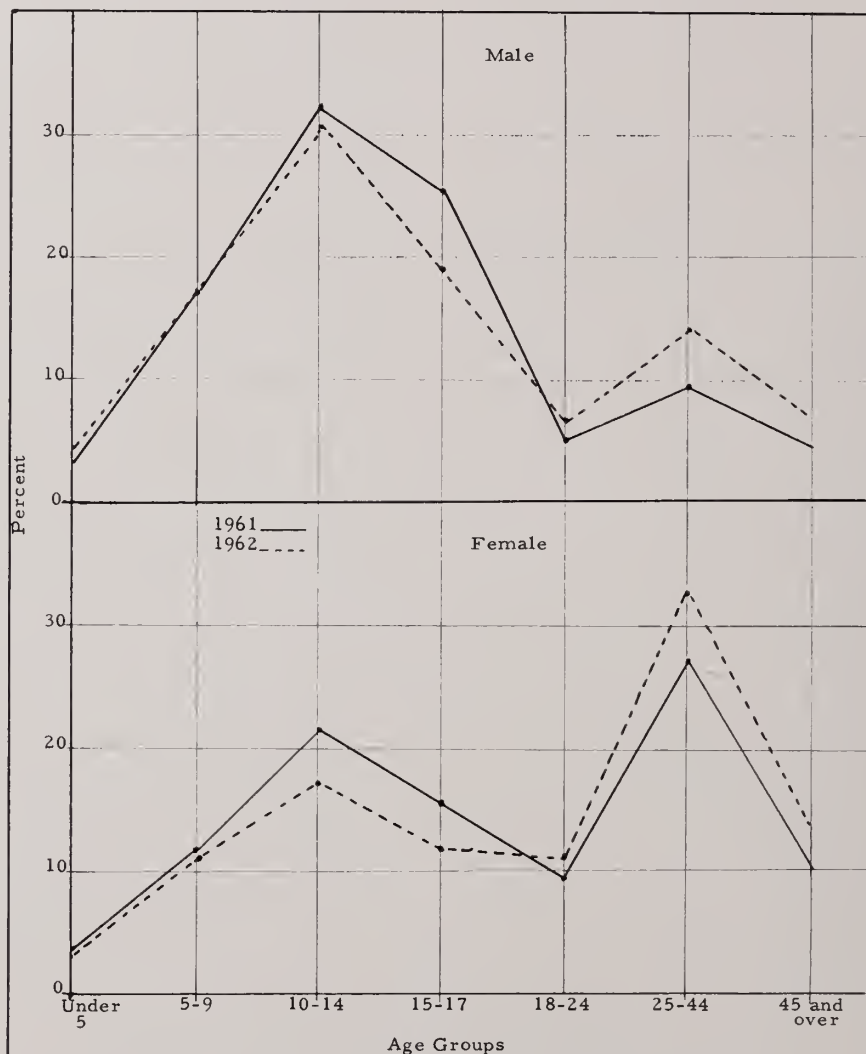


Chart No. II - Percentage comparison of distribution of sex and age groups for terminated cases from Virginia's Mental Hygiene Clinics for fiscal years 1961 and 1962.

but also to the age at "termination" of service.

A reference to Table I shows the total "terminations" graphically for the two years. Although there was very little change in the percentage distribution for the cases under nine years of age, the 10 to 14 year age group decreased about 4%. The 15 to 17 year old age group decreased about 7%.

"dip" in the 18 to 24 year age group is of special interest and comments will be made later.

Chart II shows the distribution of the "terminated" cases by age groups and sex. The 18 and under age group is much higher for males than females. This is probably because delinquent behavior of boys is of such a nature that they would be referred more

often by courts and schools. (For both sexes the type of delinquent behavior which might lead to court referral is greater with school age children.) The reverse is shown for the 18 years of age and over group. Here the females have a higher rate. Apparently young adult women have more emotional problems than young adult men. In this age group, other studies than ours have shown that physician referrals are more frequent for females than for males in this age group.¹

The trend away from children toward adults in the mental hygiene clinics of Virginia is also national. The Out-Patient Study Section Biometrics Branch, National Institute of Mental Health, reported that as of 1959, the greatest increase in service has been for the young adult populations while both the very young and the very old remain relatively static.¹

Independently of the statistics accumulating in the Central Office in Richmond and in the National Institute, the staff of the Northern Virginia Project brought to light corroborating information, particularly in relation to the 18 to 20 year old "dip" noted on our charts. At the time that the project staff conducted a one-week survey of the needs for service in the Northern Virginia area, they asked all of the usual referring

sources to itemize what the needs were for psychiatric services in that area. Dr. Zolik, the project coordinator, in a personal communication to the authors noted that the number of cases having mental health problems that are known to community agencies "drops very sharply at age 18 when the children leave school and begins to pick up around age 25, probably shortly after marriage."² Therefore, he has termed the period between 18 years of age and 25 years of age as the "zone of invisibility" because need for services is not "seen"—hence is "invisible." Possibly some of the young men are in the Army or college. Maybe the young men and women are more independent: no longer in school or at parents' homes, many have married and not yet begun to have troubles.

Any sort of speculation is, of course, far from scientific but at least the above figures seem to show two things—an aging of the clientele of the clinics and an apparent "golden age" for mental health from age 18 to 24, so far as our mental hygiene clinics statistics are concerned.

1. Norman, Rosen & Bahn—*Mental Hygiene* 46: 3, July 1962, pp 321-343.

2. Zolik, Edwin S., Ph.D.—*Personal Communication*.

Too Many Drugs Better Than Too Few

Despite the seeming inefficiencies of free competition, I, as a physician, would rather be deluged with more medical preparations than be forced to sit idle at the bedside of a patient—doing nothing because there are not enough drugs to save lives or comfort my patients. As the president of a pharmaceutical firm, I would rather be accused of trying too hard to market my useful products than to default on marketing and—as a result—lose sales and thereby increase the costs of products to the consumer.—Theodore Klumpp, M.D. in *New Medical Materia*, June 1962.

Letters to the Editor

In Defense of the Navel.

My heart has been touched by the sincere complaint of the young man, who lost his navel (see Editorial "In Defense of the Navel" in the December issue of the Virginia Medical Monthly) and whereas, I cannot be sure that any artificially constructed navel might carry the owner through the gates of St. Peter, it is certainly true that artificial mundane navels can be effectively had.

Under separate cover I have forwarded to you my modern navel restorer (see illustration). It merely has to be strapped around the waist, with the navel pressure piece directed at the location where the new navel is desired, and the tension screw tightened, being careful not to catch any natural hair in the threads. It should be worn until "a dent" of the proper size is permanently made. In case that you have more than one patient, the plunger can be removed and sterilized. If by error a navel should be made on the dorsal surface of the body instead of the ventral it is best to instruct the patient to back through the pearly gates.

By the time this letter reaches you, work



Frischkorn's Modern Navel Restorer

will have been started on an electric model for lazy people, which will be based on the principle of a gasoline post hole digger.

Very truly yours,

HUNTER B. FRISCHKORN, JR., M.D.

December 31, 1962

*1000 West Franklin Street
Richmond, Virginia*

A New Threat to Medical Progress

Of mutual interest is a little piece of legislation called the "Drug Amendment of 1962". . . Thirteen provisions of the new law will require issuance of new or interpretive regulations, or revision of old regulations. The nature of these regulations, and how they are applied, will be the real measure of the impact of the new legislation. If the regulations are of such a nature as to give members of the health team maximum freedom consistent with the public interest, then the country can benefit from the new law. If, however, the implementing regulations are needlessly severe, they might easily slow down the flow of effective drugs and raise their costs. The F.D.A. has already proposed a series of regulations on clinical testing. These are so severe as presently worded that, according to the opinions of hundreds of research scientists, they post a real threat to medical progress.—Austin Smith, M.D., President, Pharmaceutical Manufacturers Association, to National Association of Chain Drugstores.

Woman's Auxiliary

<i>President</i>	Mrs. A. B. Gravatt, Jr., Kilmarnock
<i>President-Elect</i>	Mrs. J. M. Moss, Alexandria
<i>Vice-Presidents</i>	Mrs. J. T. McFadden, Norfolk
	Mrs. Theodore McCord, Fairfax
	Mrs. C. S. Armentrout, Harrisonburg
<i>Recording Secretary</i>	Mrs. R. L. Norment, Arlington
<i>Corresponding Secretary</i>	Mrs. N. R. Tingle, Mollusk
<i>Treasurer</i>	Mrs. W. A. Eskridge, Parksley
<i>Publications Chairman</i>	Mrs. W. M. Eagles, Richmond
<i>Directors</i>	Mrs. W. F. Grigg, Jr., Richmond
	Mrs. F. Clyde Bedsaul, Floyd
	Mrs. Walter A. Porter, Hillsville

Annual Meeting

The 40th Annual Meeting of the Woman's Auxiliary to The Medical Society of Virginia was held in the Assembly Room of the Sheraton Park Hotel, Washington, D. C., on October 15, 1962, at 9:30 a.m.

The meeting was called to order by the President, Mrs. Grigg, and the invocation given by Mrs. Walter Porter.

The pledge of loyalty to the Woman's Auxiliary to the American Medical Association was repeated in unison. The assembly was greeted by Mrs. Grigg.

The address of welcome was given by Mrs. Theodore McCord and the response given by Mrs. K. W. Howard. The roll was called by the secretary. Present were 12 officers and directors, 16 committee chairmen, and 15 Auxiliary presidents. Minutes of the Annual Meeting, 1961, were approved by the Reading Committee.

Minutes of the pre-convention board meeting were read and approved. There followed convention announcements by Mrs. Michael Puzak.

The Treasurer gave her annual report. Filed as read.

Mrs. Armentrout made the awards for A.M.E.F., the first prize for the largest contribution going to Norfolk, 2nd prize for largest increase per capita to Northern Neck, and the largest percentage increase to Wise County.

Mrs. Grigg gave her annual report.

Mrs. Diamant then gave the courtesy resolutions and Mrs. Gravatt moved the courtesy resolutions be adopted. Mrs. Howard seconded the motion. The motion was carried. The courtesy resolutions were as follows:

WHEREAS, the success of a state convention is the product of months of careful planning and painstaking work,

THEREFORE BE IT RESOLVED that sincere thanks be expressed to the three Hostess Auxiliaries for their hospitality and courtesy shown to the guests.

To the general Chairman:

Mrs. James Moss, Alexandria

Mrs. Herman Diamant, Arlington; her co-chairmen, Mrs. A. J. Orlosky, and Mrs. Robert Norment and all Committees.

Mrs. Peter Soyster, Fairfax

To Mrs. Theodore McCord for her warm welcome,

To Mrs. Walter Porter for her inspiring invocation,

To our honored guests:

Mrs. Wm. G. Thuss, President of Women's Auxiliary to A.M.A.

To the distinguished President of The Medical Society of Virginia,

Dr. Russell Buxton, for his address,

To the management of the Sheraton Park Hotel for their courteous attention to our needs,

To Julius Garfinckel & Co., their fashion coordinator, Mrs. Ruby Messenger and her staff, our thanks for the fashion show.

To Mrs. William F. Grigg, our president, who has in the past year so graciously and dignified represented this group and,

To each member of the Alexandria, Arlington, and Fairfax Auxiliary who contributed so much of their time and efforts to make this 40th annual convention a success.

BE IT ALSO RESOLVED, that appropriate letters of thanks be mailed to each principal mentioned.

Mrs. Gravatt reported on the Chicago Conference of National officers and Chairmen and State Auxiliary presidents.

Mrs. McCord gave a report on the Chicago A.M.A. meeting for Mrs. Moss.

The finance chairman, Mrs. Porter, outlined the budget as proposed by the committee. The recommendation of the board to accept this budget as proposed was read by the Secretary. Mrs. Porter moved its acceptance and Mrs. McCord seconded. Motion carried.

Mrs. Thuss, National President, then gave us a very inspiring talk.

Mrs. K. W. Howard moved we balance the budget by putting \$69.00 in the miscellaneous fund. Mrs. Porter seconded the motion.

The secretary read the recommendation from the board that interest on our savings account in the amount of \$61.76 be contributed to A.M.E.F. and moved acceptance of this recommendation. Mrs. Porter seconded. The motion carried.

Mrs. Bedsaul presented her report outlining the slate of officers for 1962-63. It was

moved that we accept the slate as proposed by Mrs. Bedsaul and seconded by Mrs. Mitchell. Slate is as follows:

President Elect	Mrs. James Moss
1st Vice Pres.	Mrs. J. T. McFadden
2nd Vice Pres.	Mrs. Theodore McCord
3rd Vice Pres.	Mrs. C. S. Armentrout
Recording Sec.	Mrs. R. L. Norment
Correspond. Sec.	Mrs. N. R. Tingle
Treasurer	Mrs. Walter Eskridge
Directors:	Mrs. W. F. Grigg
	Mrs. F. C. Bedsaul
	Mrs. W. A. Porter

Mrs. Grigg asked for further nominations from the floor. There were none. The nominations were declared closed. Mrs. Evelon moved that the nominating ballot be elected. Mrs. McCord seconded. The motion carried.

The credentials report was given by Mrs. Sapter. Total registration was reported to be 159; 85 delegates, 45 members, 29 guests.

Mrs. Evelon then gave the Memorial Service.

There being no further business, the meeting was declared adjourned.

PATRICIA W. McFADDEN,
Recording Secretary

Materials for a Better and Longer Life

Ours is a business which can continue to thrive only through constant technical innovation, through scientific development, through endless search for what is new and better. We feel deeply that the products we make and the services we perform are more than items of commerce—they are the materials for improved health, for a better and longer life. If we fail to provide them, we deprive society of the fruits of scientific achievement.—John E. McKeen, Chairman of the Board and President, Chas. Pfizer & Co., to Annual Meeting of Share Owners, April 30, 1962.

Are More Boards Necessary?

THE QUALITY of surgical training in the United States has been elevated during the past three decades to a level which previously had not existed. Following Halsted's introduction of the residency system into this country, a number of such programs were developed, chiefly by his pupils, in other institutions, and many of these provided excellent educational experience. However, most surgical training was obtained through a variety of arrangements and frequently the final product was of questionable competence. Through the efforts of leaders in American surgery in the late 1930's the American Board of Surgery was established and included as Founder members qualified surgeons of utmost competence. In addition, stringent requirements for training were drawn up which a candidate must fulfill before he is eligible for examination by the Board. Although opposition existed in some quarters initially, certification is now generally regarded as one of the ultimate goals to be achieved by those choosing a career in surgery. Subsequently the Board has been used in ways not intended by its originators, such as an index for appointments to hospital staffs and for additional stipend by the Veterans Administration. While criticism occasionally has been directed against it, its overall influence on surgical practice has been a decidedly favorable one.

During recent years efforts have been made to establish other boards which involve essentially the same sphere of surgery as that included in the American Board of Surgery. However, their requirements for Founder membership and certification have been questioned, and this along with other factors has caused considerable opposition to such proposals except by those seeking certification from them.

The question arises as to the desirability or necessity for creating additional boards in areas of surgery included by those which already exist. Based on the achievement of greater excellence in surgical training and practice there is no answer for the affirmative. One must conclude, therefore, that there is no need for additional boards in an area of surgery already encompassed by a long established and recognized board which has been one important factor responsible for general improvement of surgical education and practice.

WILLIAM H. MULLER, JR., M.D.

The Boost in Our Dues

AS ALL MEMBERS of The Medical Society of Virginia doubtless know, on January 1 the annual membership dues for regular active members were raised from \$25.00 to \$40.00. Many members may not have been aware of the reasons that made this increase necessary until they read Mr. Robert I. Howard's lucid explanation in the January 2 issue of *News and Views*.

The pharmaceutical houses have always been the mainstay of medical journal advertising. One of the by-products of the Kefauver Committee's investigation of the drug industry has been a sharp retrenchment in its advertising program. As a result the Virginia Medical Monthly, for the first time in many years, finds itself operating in the red. This means the Journal cannot be of financial aid to the Society at the present time.

This and a number of other factors forced the Council and House of Delegates to raise the dues above the level established in 1946. The decision was made with regret and only after all other alternatives were considered and found wanting. Members at least have the consolation of knowing that our new schedule falls far below the national average and only one state society charges its members less than The Medical Society of Virginia. In view of the many services provided by our Society the most ardent admirer of Senator Byrd's fiscal policies should feel, despite this increase in dues, that we are certainly receiving our money's worth.

Clinical Aids for the Physician

ON PAGE 85 of this issue of the Virginia Medical Monthly may be found a new feature captioned "Diagnostic Laboratory Medicine". It is anticipated that this will appear each month. The material will be compiled and presented by members of the Division of Clinical Pathology and Hospital Laboratories of the Medical College of Virginia.

Topics of practical value to the practicing physicians of Virginia will be chosen and it is believed that this will prove a popular and useful feature. If information is desired on any particular subject within the scope of diagnostic laboratory procedures, it is suggested that the above division of the MCV be contacted.

H. J. WARTHEN, M.D.

Society Activities

Richmond Academy of Medicine.

Officers for the Academy were elected at their annual meeting in December. Due to the death of Dr. John M. Meredith, president-elect, Dr. R. Campbell Manson, first vice-president, will succeed Dr. John M. Lynch to the presidency. Dr. Charles M. Nelson* was named president-elect, Dr. William C. Gill, Jr., second vice-president, Dr. H. Fairfax Conquest, recording secretary, and Dr. Richard W. Dodd, sergeant-at-arms. Drs. Elam C. Toone, Jr., and Carington Williams were elected to the Board.

*Deceased, December 31st.

Fredericksburg Medical Society.

Dr. C. V. Cimmino has been elected president of this Society, succeeding Dr. J. G.

Willis. Dr. J. W. Painter is vice-president and Dr. C. J. Robbins, III, was re-elected secretary-treasurer.

Danville-Pittsylvania Academy of Medicine.

Dr. Walter C. Fitzgerald is the new president of the Academy, succeeding Dr. Clifford G. Gaddy. Drs. William L. Sager and George A. Weimer are vice-presidents and Dr. Baxter H. Byerly, secretary.

American College of Physicians.

The Virginia section of the College will hold its annual meeting at the Golden Triangle Hotel, Norfolk, February 16th. The Virginia Society of Internal Medicine will meet the following day.

News Notes

New Members.

The following new members were received into membership in The Medical Society of Virginia during the month of December:

Theodore Adler, M.D., Norfolk
Ronald Alan Apter, M.D., Arlington
Gerald L. Daniel, M.D., Arlington
William Sidney Foreman, Jr., M.D.,
Lynchburg
Terring W. Heironimus, III, M.D.,
Charlottesville
Kenneth Roger Johnson, M.D.,
Alexandria
Donald Marvin Levy, M.D., Norfolk
Rudolf T. Rothhaus, M.D., Richmond
Charles Bayne Stringfellow, M.D.,
Norfolk

Austin Thomas Williams, Jr., M.D.,
Arlington

Dr. Neil Callahan,

Portsmouth, was elected secretary of the section of Ophthalmology and Otolaryngology of the Southern Medical Association at its meeting in November.

Superintendent of Western State Hospital.

Dr. James H. (Jack) Druff has been named superintendent of Western State Hospital, succeeding Dr. James B. Pettis who retired November 30th because of ill health. Dr. Druff has been serving as acting superintendent and a clinical director since July 1st.

The Annual Clinical Conference

Of the Louise Obici Memorial Hospital, Suffolk, will be held on March 27th. The program is being arranged in conjunction with the post-graduate division of Merck, Sharp and Dohme and will have as its main topic Cancer. The moderator will be Dr. Felix Wroblewski, Memorial Hospital, New York. Other members on the program will be Dr. Richard B. Brasfield, Memorial Hospital for Cancer, New York; Dr. Charles Harrold, Memorial Hospital for Cancer; Dr. Eli M. Nadel, National Cancer Institute, Bethesda; Dr. Eugene P. Pendergrass, Hospital of the University of Pennsylvania; Col. Joseph Blumberg, Deputy Director, Armed Forces Institute of Pathology, Washington.

Five hours category, one credit will be given by the Virginia Academy of General Practice.

Dr. James B. Kenley

Has been appointed as director of the Bureau of Epidemiology of the State Department of Health, succeeding Dr. Frederick J. Spencer who recently resigned. He will also be an assistant to Dr. W. R. Southward, Jr., in the work of the Division of Disease Control. Dr. Kenley has been director of the Waynesboro-Staunton-Augusta Health District.

Hospital Staff Appointments.

Dr. W. Carey Henderson has been elected president of the Medical Staff of the Northampton-Accomack Memorial Hospital. Dr. W. S. Burton was elected vice president; Dr. J. R. Mapp, secretary-treasurer; and Drs. W. T. Green, Jr., and Walter Eskridge members of the executive committee.

Dr. John C. Ransmeier has assumed the office of president of the Alexandria Hospital Medical Staff, with Dr. James Brown as president-elect and Dr. H. Glenn Thompson, secretary-treasurer. Members of the executive committee are Drs. John C. Watson, John W. Roark, Alvin C. Wyman, and Simon Paluch.

Dr. Joseph A. Ravenel has been appointed acting chief of surgery at the new R. J. Reynolds-Patrick County Memorial Hospital in Stuart. Drs. Henkel M. Price and William R. Thornhill have been appointed to the medical staff.

Symposium on Cardiovascular Disease.

The fourth annual heart symposium on cardiovascular disease, sponsored by the Tidewater Heart Association, will be held at the Golden Triangle, Norfolk, March 13th. The following program will be presented: Causal Relationships in Heart Disease by Dr. Meyer Texon, Assistant Professor of Forensic Medicine, New York University; Medical Problems in the Insurance Underwriting of Cardiovascular Disease by Dr. Albert L. Larson, Chief Medical Director, Travelers Insurance Companies, Hartford, Connecticut; The Risk of Pregnancy in Heart Disease by Dr. Charles L. Cunniff, Attending Cardiologist, Margaret Hague Maternity Hospital, Jersey City; Uses and Abuses of Present Day Diuretics by Dr. Ralph V. Ford, Assistant Professor of Medicine, Baylor University, Houston; and Present Day Coronary Cine-angiography by Dr. Earl K. Shirey, Department of Pediatric Cardiology, Cleveland Clinic Foundation. Panel discussions will be held following these presentations.

Heart Association Grant.

The Virginia Heart Association and its seven member chapters have announced that a \$40,000 grant will be made to the University of Virginia Medical School to establish a chair of cardiovascular research. The grant becomes effective upon appointment of the first incumbent of the chair and is made for an initial two-year period, with possibility of year to year continuance.

Opportunities Available in Virginia

For physicians as Directors of local health departments; salary range from \$12,000 to \$15,675. Entrance salary dependent upon

qualifications. Inservice training and post-graduate study opportunity available. Applicants must be American citizens, under 48 and eligible for Virginia licensure; liberal

sick leave, vacation, group life insurance and retirement benefits. Write: Director of Local Health Services, Virginia State Department of Health, Richmond 19, Virginia. (*Adv.*)

Obituaries

Dr. John Franklin Woodward,

Formerly of Norfolk, but more recently of Laughlintown, Pennsylvania, died December 2nd. He was ninety-six years of age and a native of Prince George County. Dr. Woodward graduated from the Medical College of Virginia in 1890, following which he took special training in eye, ear, nose and throat. He located in Norfolk in 1893 and remained there until his retirement some years ago. Dr. Woodward was the oldest member of the American Rhinological-Laryngological and Otological Society, and he had been a member of The Medical Society of Virginia for seventy-two years.

A son and a daughter survive him.

Dr. Henry Stapleton Daniel,

Prominent Louisa County physician, died December 7th, having been in poor health for several years. He was sixty-nine years of age and a graduate of the School of Medicine, University of Virginia, in 1917. Dr. Daniel began his practice in Louisa following his internship. He was prominent in civic affairs of the county, having served as Mayor of Louisa, on the town council, a charter member and past president of the Rotary and Ruritan Clubs and past master of the Day Masonic Lodge. Dr. Daniel had served as president of the Louisa County Medical Society and the Piedmont Medical Society. He had been a member of The Medical Society of Virginia since 1918.

His wife and two sons survive him.

Dr. Charles Morris Nelson,

Prominent Richmond physician, died December 31st, at the age of fifty-five. He received his medical degree from the University of Virginia in 1932 and began the practice of urology in Richmond in 1937. Dr. Nelson was president-elect of the Richmond Academy of Medicine and had been a member of The Medical Society of Virginia since 1937. He was a diplomate of the American Board of Urology and a member of the American Urological Association.

Dr. Nelson is survived by two sons, a daughter, a sister and a brother, Dr. Kinloch Nelson, also of Richmond.

Dr. John Moyer Meredith,

Prominent Richmond physician, died December 16th, at the age of fifty-seven. He received his medical degree from the University of Pennsylvania in 1930 and came to Richmond in 1941. Dr. Meredith was chairman of the division of neurological surgery of the Medical College of Virginia. He was the author of more than 130 articles in his field. At the time of his death, Dr. Meredith was president-elect of the Richmond Academy of Medicine and would have been installed as president in January. He had been a member of The Medical Society of Virginia for twenty-four years.

His wife and a brother survive him.

Dr. John Moyer Meredith was born in Perkasio, Pennsylvania, on November 9, 1905, the son of Charles M. and Ida Jane Moyer Meredith.

He received his academic and medical education at the University of Pennsylvania, receiving a Bache-

lor of Arts Degree in 1927 and Doctor of Medicine in 1930.

Following graduation from the School of Medicine he served as a surgical interne at the hospital of the University of Pennsylvania from 1930 to 1932, and then became a Fellow in Neurological Surgery at the Lahey Clinic, Boston, Massachusetts, from 1932 to 1934.

After this, he began his long, devoted and valued service at the Medical College of Virginia. From 1934 to 1937 he was Assistant Resident and Resident on the Neurological Surgery Service under the late Dr. C. C. Coleman, one of the pioneers in this branch of medicine. Here he formed some of the associations and friendships that he had cherished and to which he has been loyal throughout his life. In 1937 he began a four year period as Assistant Professor of Neurological Surgery at the University of Virginia and aided in establishing this department at that institution. In 1941 he returned to the Medical College of Virginia as Associate Professor of Neurological Surgery, and in 1951 was appointed Professor and head of the department after the resignation of Dr. Coleman. With Dr. Charles Troland, who became associated with the Medical College of Virginia in 1945, he continued to develop with distinction the clinical activities, the resident training, and the teaching in this field of medicine.

Many accomplishments and honors attest the high regard with which he was held by his colleagues, not only locally, but nationally and internationally. Certified by the American Board of Neurological Surgery, he was a member of the American Academy of Neurological Surgery, the Harvey Cushing Society, the Southern Neurological Surgical Society and the American College of Surgeons. He was a member of the Governor's Safety Committee, a past consultant to the Surgeon General of the United States Public Health Service, and served as attending consultant neurosurgeon to many local hospitals and medical installations. He was an honorary member of the editorial board of the *Indian Journal of Medicine* (Punjab); the author of sections in several books on neurological surgery; and the author or co-author of approximately 120 published articles in medical journals.

Dr. Meredith was interested not only in medical problems related to his specialty but with problems related to all aspects of medicine. He had been for a long time an active member of the American Medical Association, The Medical Society of Virginia and the Richmond Academy of Medicine. He was vitally interested in the latter, having served on the Board of Trustees and as a Vice-President, and at this very moment would have been installed as the new President.

These are some of the tangible landmarks and

achievements in the outstanding career of John Meredith. They are abundant and can be readily tabulated. What must not escape our recognition, however, are the many distinctive and fine features of his personality and qualities of character which stamped him as one of Nature's noblemen, modest and unassuming, intensely loyal to friends and ideals, richly cultured in literature and classical music, an accomplished pianist, honest and fair in all of his dealings, and, despite a serious countenance, possessing a quiet but penetrating sense of humor.

He is survived by his wife and a brother.

It is recommended that this resolution on Dr. John Meredith be included in the minutes of the Richmond Academy of Medicine and that a copy be sent to his wife.

WILLIAM E. PEMBLETON, M.D.

H. ST. GEORGE TUCKER, JR., M.D.

ELAM C. TOONE, JR., M.D., *Chairman*

Dr. Felix Brent Wilson,

Tappahannock, died January 12th, having been in ill health for some years. He was seventy-six years of age and a graduate of the Jefferson Medical College in 1915. Dr. Wilson was in practice in Tappahannock for thirty-eight years before his retirement. He had been a member of The Medical Society of Virginia for twelve years.

His wife, a son and a daughter survive him.

Dr. Snead

Dr. Lawrence O. Snead, age 67, roentgenologist of Richmond, died at a local hospital on October 31, 1962, after a long illness. Dr. Snead was born in Halifax County on August 28, 1895, the son of John Harrison Snead and Alice P'Poole Snead. After preparatory school at Chatham, Virginia, he attended the University of Richmond, graduating in 1918 and matriculating in the same year in the Medical College of Virginia. He was awarded his M.D. degree in 1922. Following a year of residency at the City Hospital of Richmond, Dr. Snead entered the practice of roentgenology with the late Dr. Fred Hodges with whom he associated for more than thirty-five years. In 1960 Dr. Snead, and his son, Dr. Lawrence O. Snead, Jr., opened their offices together.

Dr. Snead was a member of the Richmond Academy of Medicine, the Manchester Medical Society of which he was past president, The Medical Society of Virginia, and the American Medical Association. He was past president of the Virginia Radiological So-

ciety, and a fellow in the American College of Radiology. He was a member of the Richmond Radiological Society, the American Roentgen Ray Society, and the Radiological Society of North America.

Dr. Snead was a devoted member of the Second Baptist Church and its Board of Deacons.

Dr. Snead is survived by his wife, Mrs. Empsie Shepart Snead, a daughter, Mrs. Richard T. Powers, a son, Dr. Lawrence O. Snead, Jr. of Richmond, and four grandchildren.

WHEREAS, our Heavenly Father has called to his eternal reward, Lawrence O. Snead, who for forty years was a member of the Richmond Academy of Medicine, a dedicated worker in the field of medicine by the side of many of us, and a faithful friend to all of us, and

WHEREAS his passing is a great loss to this Academy and his Community as evidenced by the respect and esteem in which he was held by his fellow physicians, patients, and fellow citizens, now,

BE IT RESOLVED that the sympathy of the members of the Richmond Academy of Medicine be extended to the family of the late Lawrence O. Snead, M.D. and a copy of this resolution be sent to his family, spread upon the minutes of this meeting and be sent to The Medical Society of Virginia for publication in its official organ, The Virginia Medical Monthly.

FRANK POLE, M.D.

WYNDHAM B. BLANTON, JR., M.D.

FRANK M. BLANTON, M.D.

Dr. Whitfield

Dr. James Morehead Whitfield, Jr., was born in Richmond, on May 25, 1898. He was the son of Dr. James Morehead Whitfield and Mary Mathew Whitfield and was a descendant of Chief Justice John Marshall and James Motley Morehead, a governor of North Carolina.

Dr. Whitfield was educated at McGuire's School, the University of Richmond, and the Medical College of Virginia where he received his medical degree in 1924. He interned at St. Elizabeth's hospital in Richmond and continued with his resident training in obstetrics at the Medical College of Virginia hospital. Later he became the director of its obstetrical service as an associate on the faculty, relinquishing this activity after 1930. In 1938, he returned to the faculty as an associate in Gynecology and Obstetrics.

Dr. Whitfield also served on the staff at Johnston-Willis, the Retreat for the Sick, Sheltering Arms and St. Luke's Hospital.

He was a diplomate of the American Board of Obstetrics and Gynecology, obstetrician to the Instructing Visiting Nurses Association of Richmond,

and served on the Board of Directors of the American Red Cross.

Dr. Whitfield was a member of St. Mark's Episcopal Church.

His professional connections included the Richmond Academy of Medicine, The Medical Society of Virginia, the American Medical Association, the Virginia Obstetrical Association, the South Atlantic Associations of Obstetricians and Gynecologists, the Southern Medical Association, and the Richmond Obstetrical and Gynecological Club.

He was a veteran of World War I.

In his early life, Dr. Whitfield became interested in aquatics and devoted his skill in the water to the training of Richmond youth at the local Howitzer Army pool, the Boy Scout camp, the Girl Scout camp, the Y.W.C.A. and Shield's Lake. As a master swimmer, he stimulated a city-wide consciousness in the sport and developed numerous outstanding competitive groups.

His joviality and spirit of fellowship was matched only by his championship for all that was good for maternal and infant welfare. An inspiring teacher, an investigator, a ruthless disciple of truth and good ethics, he had a capacity for complete fullness of life and this he shared generously.

Since God in His infinite wisdom has taken Dr. Whitfield from our midst

BE IT RESOLVED:

1. that the community has lost a staunch citizen and an able physician;
2. that those who knew him are richer and poorer; and
3. that a copy of these resolutions be spread upon the minutes of the Richmond Academy of Medicine and also be sent to the members of the bereaved family.

MEYER VITSKY, M.D.

DEAN B. COLE, M.D.

WEBSTER P. BARNES, M.D.

Dr. Mangum

Charles Preston Mangum was born in Kinston, North Carolina, May 10, 1893; he died, after a brief illness, in Stuart Circle Hospital October 26, 1962, just short of the Biblical "three score years and ten."

After graduation from Warrenton Preparatory School in his native state, he entered the University of North Carolina from which he received, in 1915 the degree of Bachelor of Science and, in 1918, was graduated from Jefferson Medical School in Philadelphia. On November 6, 1918, he married Margaret Blanche Edwards of Chicago; and several days later, 1st Lieutenant Charles Mangum, medical officer of the 508th Engineers embarked for service in France.

At the end of World War I, Dr. Mangum returned

to Kinston with his bride to engage in general practice for somewhat more than a year. He then entered St. Louis Children's Hospital for training in pediatrics. On his return to Kinston to practice his specialty, he pioneered in the establishment of free children's clinics and was a founder member of the North Carolina Pediatric Society. He was credited with having played an important role in the remarkable decline in the death rate of children in North Carolina during his period of practice in that state. Dr. Mangum, in 1925, was largely instrumental in the establishment of Memorial General Hospital of Kinston and, in 1950, was honored in ceremonies at which a bronze plaque commemorating the founding of the hospital by him and five others was unveiled.

In 1933, Dr. Mangum moved to Richmond, where, until his death, he practiced pediatrics. In 1937, he became a member of the Board of Directors of Stuart Circle Hospital.

The practice of pediatrics to Dr. Mangum meant more than the tender, loving and highly intelligent care of the child. It meant, of equal importance, the education and emotional support of the young mother, the instruction of the mother in the care of the healthy baby and the significance of symptoms to be watched for and reported in the ill child. The emotional strain on the parents of an illness of their child was never overlooked by Dr. Mangum, and he was especially concerned to encourage and reassure "his" parents and lessen their anxieties.

He was a member of a number of professional societies including the American Medical Association, The Medical Society of Virginia, The Richmond Academy of Medicine, the American Academy of Pediatrics and the American Board of Pediatrics. He was also a member of the Rotunda Club, the Country

Club of Virginia and the Virginia Yacht Club, Urbanna.

Charles Preston Mangum is survived by his wife and four sons: Charles Preston, Jr., of Norfolk, William Goodson of Winston-Salem, Robert Edwards and Kevin Edward of Richmond. Also surviving are six grandchildren.

A. STEPHENS GRAHAM, M.D.
M. MORRIS PINCKNEY, M.D.

Dr. Perrow

The Executive and General Staffs of the Marshall Lodge Memorial Hospital, Inc., of which Dr. James B. S. Perrow has been an honored member, desires to place on record this tribute as an expression of respect.

WHEREAS, Dr. James B. S. Perrow has been a much beloved physician in the science of healing in the City of Lynchburg and

WHEREAS, our association both professionally and socially has been one of mutual admiration and respect, we the members of the Staff of the Marshall Lodge Memorial Hospital wish to recognize in writing, for future posterity, the high order of his physicianship while on this earth, and fineness of his character. He has long and ably served this hospital with a dedicated purpose to the welfare of both the hospital and his patients. He has taken a very active part in the success of this institution, having served on many committees and as a member of the Executive Staff at the time of his death. It is our desire to spread a copy of these resolutions on the minutes of our staff and that a copy be sent to his family and to the Virginia Medical Monthly.

FRANK I. HOBBS, M.D., *Secretary*

Guest Editorial

The Image of the Doctor

THERE has been considerable talk in recent years with regard to creating a new "image of the doctor". The old image has been destroyed, or at least tarnished, by the numerous attacks on the doctor by governments in many countries, including our own. As a method of combating this, some well meaning people (including some people of importance in the A.M.A.) have suggested creating a new image of the doctor. It should be pointed out that the image of the doctor cannot be created—it must be lived.

All of us, even before we studied medicine, created our own image of the doctor and the image was constructed from the lives of many living doctors whom we knew. I shall never forget the family doctor who was the doctor for my family all the time I was growing up. He was Dr. Thomas B. Amiss (a graduate of the University of Pennsylvania), of Luray, Virginia, who has been mentioned before in these pages. He was held in the greatest respect by everyone who knew him, whether he was their doctor or not. He was seldom seen at social functions. This was also true of the other doctors in the county. They were completely dedicated to their work and often their bills were not paid. They were looked up to by everyone.

Also, in my county there was a neighbor and kinsman of ours, Dr. Frank P. Koontz—a contemporary of my father's. He had graduated in medicine at the Jefferson Medical College in the 1880's. His was a large country practice, and his visits were made either on horseback, in a buckboard, or a buggy—sometimes in a dog cart. He always carried his medicines and instruments with him. When traveling by horseback, he carried these in saddlebags. The Blue Ridge Mountains were only a few miles away, and at all hours of the night his horse could be seen or heard taking him to see people in the mountains or in the mountain hollows. He was never known to refuse a call any place. When I was studying medicine, he used to love to talk to me with great adulation of the professors he

had in the Jefferson Medical College. One of them whom he admired greatly was Joseph Price. As I remember it, he also used to mention DaCosta, Gross and Agnew. (I believe that every doctor likes to remember his great teachers. I shall never forget the inspiration given me by some of mine, such as, for instance, Welch, Halsted, Kelly, Mall, Abel, Williams, Finney, Bloodgood, Barker and Thayer.) I frequently heard him say, "The study of medicine is a beautiful thing, but the practice of it is hell". This is understandable from the type of practice he had. Once while a medical student, when home for the Christmas holidays, he told me that he had a case of placenta praevia to deliver up in a mountain hollow the next morning, and asked me if I would like to go along. Naturally I was delighted. We found his patient in bed in a one-room mountain shack. He got a tin basin, some hot water, threw some bichloride tablets in the water, and after they were dissolved, cleaned up the patient and his own hands with the bichloride solution. He then did a Harris manual dilatation of the cervix, went through the placenta, did a version and extraction, and wound up with a live mother and a live child. This was a feat that would not have been sneezed at at the Johns Hopkins Hospital at that time. However, it was all in a day's work for him, and he thought nothing of it. He *lived* the image of the doctor.

When I was in college at William and Mary, the college physician held sick call every morning. He was a gentleman of the old school, and was rather old when his student patients were very young. Malaria was still fairly common in those days. Our college physician's favorite prescription was quinine, which he prescribed for anything from a sprained thumb or a cold to some more serious malady. Every student's bureau drawers were full of quinine capsules—few ever took them. It was no wonder that about that time Osler was being considered a therapeutic nihilist. However, our old college physician had the admiration, respect, and affection of all the students. He always had a kind word, was always cheerful and encouraging, and always doing the best he could, although he practiced an entirely different brand of medicine from that practiced by some of his more renowned contemporaries. However, he *lived* the image of the doctor.

What has caused the change, if any, in this image in recent years? (There possibly has been a change in the "image" so far as some doctors are concerned.)

In the first place, during the 1930's there grew up, in this country, a type of political philosophy whose doctrine in essence was: You don't owe your country anything, your country owes you everything from the cradle to the grave. Such a political philosophy is un-American and alien

to everything Americans had thought, and fought for, up until that time. It undoubtedly destroyed some of the idealism in some of the new doctors who have come on since that era. However, I believe it affected only a portion of them and that the great majority still carry the "image" of the old doctor in their hearts.

Another factor has been the hostile attitude of the national administration, which started at the time the Administration tried to force through Congress a bill for national compulsory health insurance. In order to win support for their measure, the Administration deliberately did everything it could to downgrade the doctor and to lower him in public esteem. That they succeeded to a certain extent is beyond question. The doctor's "image", however, I believe has been downgraded principally in the minds of those do-gooders who no longer believe in the private enterprise system, and who would like to see us become a completely socialistic state. Moreover, there is considerable evidence that most of the people who still believe in the freedom and dignity of the individual, who believe in thrift, initiative, and in Osler's master word WORK, still believe in their doctors and that their doctors still believe in them. Whenever there is such a relationship, one does not have to worry about the image of the doctor—he is living it.

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The Treatment of Bell's Palsy

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The medical and surgical treatment of Bell's Palsy, as well as the rationale for this treatment, is presented.

THE TREATMENT of Bell's Palsy, or idiopathic peripheral facial paralysis, is based on the ischemic hypothesis. The paralysis is presumed to result from a sequence of events following a segmental vasospasm in patients with a dysfunction or dysregulation of the autonomic nervous system.¹ The initial arteriolar spasm, which may be transient or prolonged, produces a local anoxia, capillary dilatation, increased capillary permeability, and transudation of fluids and edema. As the edema, in turn, compresses the nerve, it causes further capillary obstruction, more lymphatic and venous stasis, and additional swelling with more ischemia.

The primary ischemia and the edematous neuropathy is further complicated by the compression factor of the swollen nerve in the rigid Fallopian canal, the significant anatomical peculiarity of the facial nerve. The secondary ischemia caused by the bony canal and compression on the collateral blood supply within the facial canal accounts for the special vulnerability of the facial nerve to paralysis. The extent of the paralysis therefore depends upon the severity and duration of the initial vasospasm and on the size of the Fallopian canal in the stylomastoid area.

There are a number of reasons for the

soundness of the neurovascular theory. It explains some of the salient features of the disease—sudden onset, strict localization of symptoms and findings to the facial nerve, variability of clinical course, response to treatment, and pathological findings. No evidence of inflammation has been found on histologic examination of the facial nerve in cases of Bell's palsy.² The picture is that of edema, dilated capillaries, exudation of fluid, medullary sheath, and nerve degeneration; all the findings suggest an acute vascular disturbance. Microscopic inspection of the nerve at operation has also shown the marked edema of the nerve. In most cases the site of greatest compression is in the canal region near the stylomastoid foramen.^{3,4} However, the ischemic theory does not explain the etiologic factors responsible for the primary vascular spasm, the seasonal incidence, the epidemiology of Bell's palsy, and the evidence of a viral infection found by the complement fixation test in the sera of some patients with Bell's palsy.

The degree of paralysis depends upon the amount of ischemia and edema and its effect on nerve conduction. In the case of severe and prolonged ischemia, complete degeneration of the nerve may result; mild or transient ischemia affects only the myelin sheath without damage to the Schwann cells and axis-cylinders. In the latter instance, Collier⁵ has repeatedly pointed out the need to differentiate between nerve degeneration and a reversible conductive block lesion. When only the myelin sheath is involved recovery is always spontaneous and complete.

If partial nerve degeneration has taken place, regeneration may ensue, with probable spontaneous clinical recovery; if the degenerative lesion is complete and this affects the supporting structures of the nerve, spontaneous recovery is less likely, and if at all,

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the recovery will be complicated by the inevitable sequellae of all forms of nerve regeneration—contractures, associated movements, imperfect muscle function, and asymmetry.

It is therefore incumbent upon the clinician to evaluate each case of Bell's palsy on the basis of the probable degree of nerve damage. It has been my experience that Bell's palsy in general has been treated in a cursory manner. Many cases of simple conductive block have been managed energetically and excessively; more cases of severe nerve damage have been treated with hopeful expectancy. The tragic result of this casual interest is the ten to fifteen percent of individuals who do not recover at all or only in part and are doomed to a life of permanent facial deformity.

as an incomplete, a complete, or a profound paralysis. Studied observation will usually indicate the range of involvement; in addition, the patient's symptoms will provide a measure of the degree of severity, i.e., the difficulty in eating and drinking.

The factor of pain should receive careful attention. Most authorities are in agreement that pain is a very significant symptom, and the amount of pain is in proportion to the severity of the vasospasm. Some men of wide clinical experience regard pain as a deciding factor; Kettel⁶ recommends decompression in cases of complete paralysis accompanied at the onset by considerable pain, and Sullivan³ states, "A Bell's palsy presenting complete facial paralysis, loss of the faradic response, accompanied by pain, is indicative of a severe degenerative lesion and warrants

CHART I — BELL'S PALSY

GRADE	Clinical Signs	Pathological Lesion	Treatment	Prognosis
I	Incomplete or mild paralysis Pain absent Normal electrical reactions	Conduction block	Reassurance Physiotherapy Steroids	Complete recovery
II	Complete paralysis Pain absent Normal electrical reactions	Conduction block	Reassurance Physiotherapy Steroids Vasodilators	Complete recovery
III	Complete paralysis Mild pain Abnormal electrical reactions	Prolonged conduction block to partial nerve degeneration	Reassurance Physiotherapy Steroids Vasodilators Stellate block	Recovery complete to partial
IV	Profound paralysis Significant pain Abnormal electrical reactions	Complete nerve degeneration	Frank appraisal Physiotherapy Vasodilators Stellate block Decompression of No evidence of regeneration in 6-8 weeks	No or partial recovery with associated movements, etc.
V	Initial mild paralysis progressing to profound Pain Abnormal electrical reactions	Nerve degeneration; Secondary compression of nerve in fallopian canal	Frank appraisal Physiotherapy Vasodilators Stellate block Early decompression	No or partial recovery with associated movements, etc.

The purpose of this paper is to suggest a guide to the management of Bell's palsy by using the facial signs and symptoms, and the electrodiagnostic tests as a means of assessing the extent of nerve damage, and by adapting the currently accepted methods of treatment to the degree of severity of the paralysis.

In this analysis the facial palsy is classified

immediate surgical interference."

From a practical point of view, the presence or absence of taste function is unimportant. The salivary secretory function of the chorda tympani nerve may be meaningful. According to Blatt, if the flow of saliva on the paralyzed side is less than 40% of the normal side, the paralysis is considered severe

and spontaneous recovery doubtful. In this test polyethylene catheters are inserted into each Wharton's duct, and the secretion is collected after stimulating the salivary flow by the sucking of a lemon.

Modern electronic equipment has resolved much of the controversy regarding the value of electrodiagnosis in Bell's palsy. Automatic precision instruments are available for accurate repeatable testing procedures, including chronaxie, strength duration curves, galvanic tetanus ratio, and reaction of degeneration. Improved electronic instrumentation has eliminated inconstant stimuli and has made classical faradic tests reliable. A study of the electrodiagnostic criteria produced on repeated examinations gives early evidence of nerve degeneration, the presence of partial or complete degeneration, and the progress of recovery. An increase in galvanic tetanus ratio is said to be the earliest electrical sign of regeneration.⁷

CHART II — ELECTRODIAGNOSIS CRITERIA

	Normal	Degenerating	Denervated	Regenerating
Galvanic Tetanus ratio.....	3.5 to 6.0	10.0 to 1.0	1.0 to 1.5	2.0 to 20.0
Chronaxie (Millisec.).....	Less than 1	More than 15	More than 15	Less than 10
Repetitive stimuli	Minimal current range	Marked current range	Marked current range	Decreasing to minimal current range
Strength duration curve.....	Continuous flat slope	Discontinuous steep slope	Continuous steep slope	Discontinuous steep slope
Rheobase.....	Normal	High to lower than normal	Very low below normal	High to normal
Rheobase ratio.....	1.5 to 3.0	3.0 to 1.0	1.0 or less	1.0 to 3.0

*From Meditron Hand Book No. LNDG.

Electromyography is a precise method of assessing the degree of involvement, presence of partial or complete denervation, and early signs of regeneration. By its use, signs of reinnervation can be obtained many weeks before any voluntary movement can be detected. A conductive block lesion can be diagnosed from a degenerative lesion by absence of fibrillations of denervation. Analysis of the patient's symptoms, clinical examination, amount of fibrillation of denervation, and number of motor units present provide a most exact determination of partial or severe axon degeneration. In Bell's

palsies of Group IV and V the clinician should employ this means of electrodiagnosis, if at all possible, before surgery is advised. If E. M. G. evidence of impending reinnervation is present, surgery should be postponed.

It is well to remark on the limitations of all electrodiagnostic tests. There is no test available to foretell which nerve is going to proceed to degeneration. In addition, the correctness of the test depends upon the experience and skill of the technician performing the test; also the E. M. G. is not everywhere available and requires skilled, highly trained personnel.

Treatment

By definition Bell's palsy is a peripheral facial paralysis for which no cause can be found. Before initiating treatment and assessing the degree of paralysis, the physician is obligated to rule out the systemic, tem-

poral bone and central nervous system diseases which may cause facial paralysis. In addition, an evaluation of the probable site of the lesion should be made through the use of the toponostic survey of Tschiasny.

The patient with Bell's palsy is apprehensive, worried about the appearance of his face, and fearful of the diagnosis of cerebrovascular accident. Reassurance and an explanation of the nature of the malady are essential. In the case of profound paralysis with considerable pain, it is wise to frankly tell the patient the prognosis and alert him to the later possibility of surgery.

The purpose of physiotherapy is to prevent muscle atrophy and fibrosis until muscle function returns. Heat applications, controlled massage, and galvanic stimulation are advised. Local heat and diathermy are comforting to the patient and tend to relieve vasospasm and promote vasodilation. If the muscles are partially denervated, physiotherapy is of importance. Investigation has shown that fibrillation of denervation can be continued by the application of heat, massage, and electrical stimulation. "Fibrillation can continue as long as healthy contractile muscle tissue survives fibrosis." "Muscles which have been receiving adequate physical therapy treatment, fibrillate more than those not receiving physical therapy."⁸ The use of splints and slings to support the sagging muscles is of doubtful value. I have used the simple cigar or cigarette holder held in the corner of the mouth on the affected side. Later, mirror exercises are advised for muscle reeducation.

The use of vasodilators is outlined in Chart III. Many observers believe that relief of the vasospastic factor is often followed by prompt recovery. Korkis⁹ has found the vasodilation produced by paralysis of the cervical sympathetic system by stellate block

torily after a combined course of vasodilators and steroid therapy. I prefer intravenous niacin in increasing daily doses.

The rational of cortico-steroid therapy is to reduce tissue edema. There are no fully controlled studies, to my knowledge, evaluating any method of treatment of Bell's palsy. The results of treatment are appraised on the basis of clinical judgment. In the case of steroid therapy, when used early in the course of the disease, patients appear to recover more rapidly than ordinarily anticipated. As indicated in my outline, I feel steroid treatment should be used alone in cases of grade I involvement, especially if the case is seen early. In the other grades, the synthetic corticosteroids are used in combination with vasodilator therapy.

Surgical Treatment

The decompression operation has a definite place in the treatment of Bell's palsy. There are a small number of cases, probably about ten to fifteen percent, who will recover only in part or not at all. To wait hopefully for months for spontaneous recovery in this group is unwarranted and will lead to a permanent paralysis and atrophy and fibrosis of the facial muscles.

CHART III — VASODILATOR THERAPY

RECOMMENDED IN CASES SEEN WITHIN FOUR DAYS OF ONSET OF COMPLETE PARALYSIS	
Histamine (phosphate).....	2.75 mg. in 250 cc normal saline for three consecutive days I.V. 20-30 drops per minute increased to 50-60 drops if tolerated
Nicotinic Acid.....	Subcutaneous increasing doses every two to three days, starting with .1 ml. 1-100,000 dilution Daily I.V.—25 mg. increasing 25 mg. each day to 100 mg. Oral 25-100 mg. tid. a.c.
Procaine Hcl.....	Daily I.V.
Stellate block.....	Repeated daily or every two days

to be a most effective treatment of recent cases of Bell's palsy, especially if used within the first twenty-four hours. He feels that inasmuch as there is no way of telling at the onset what case is going to be mild and which severe, all cases should be treated vigorously from the start. In my experience, cases in Group II and III recover satisfac-

The candidates for decompression can be recognized by (1) presence of a profound paralysis, the presence of considerable pain, and electrodiagnostic evidence of nerve degeneration; (2) in the patient with an initial mild paralysis, which, after a few days or a week, suddenly progresses to deep paralysis accompanied by considerable pain, and ex-

hibits a change to inactivity in the electrodiagnostic tests. The pathogenesis in this latter instance is the secondary ischemic effect of the bony canal on the edematous nerve; (3) if precise serial measurements of electrical reactions reveal a rapidly progressive lesion; (4) if partial recovery is at a standstill; (5) if a relapsing palsy is present.

Most otologists agree that the decompression operation and neurolysis of the facial nerve should be considered in all cases of Bell's palsy showing no evidence of recovery within six to eight weeks, especially if the electrical tests or electromyography has shown a severe degenerative lesion.

The reluctance to perform an early decompression operation stems from a fear of inflicting a serious procedure on a nerve that might recover spontaneously. To avoid needless surgery, it is imperative to differentiate between reversible physiological block and nerve degeneration. Of course the ideal time for surgery to prevent axon destruction is within the first day or two of the paralysis. Unfortunately, there is no way of identifying those cases which are likely to proceed to nerve degeneration.

One may ask the purpose of the operation. In Cawthorne's opinion,⁴ this is designed to promote a quicker recovery of impaired function in cases in which full recovery is unlikely. The function of the operation is chiefly to facilitate regeneration, to promote improved recovery, and if done early in the course of the illness, to prevent nerve degeneration at least to those fibers not already injured. Jongkees¹⁰ stated that the patient who shows no signs of recovery and has electrodiagnostic evidence of total nerve degeneration after six weeks, has but a 5% chance of recovery when treated conservatively. In the hands of the experienced surgeon, using microsurgical techniques, the risk of further damage to the nerve is negligible. Hansel and I¹¹ have shown that in experimental Bell's palsy the facial nerve tended to recover sooner if the nerve was decompressed in the area of the stylomastoid foramen.

Conclusion

A clinical method of classifying Bell's palsy based on the degree of severity of the paralysis is presented, identifying those cases which will require intensive therapy from the cases which will probably recover spontaneously. The methods of treatment now in vogue are discussed.

The medical treatment of Bell's palsy is highly successful in a great majority of cases. Many patients will recover without treatment, but will fare better, recover more quickly, and will avoid the risk of permanent facial deformity with the currently accepted program of medical management.

The surgical treatment of Bell's palsy is reserved for the few patients who will need decompression to insure recovery. The ultimate goal is the restoration of full voluntary and emotional expression in all cases.

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Supplementary Juice for Infants

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Apple juice is shown to be better tolerated and accepted than orange juice by infants. This is especially significant since citrus juices are no longer necessary as a source of vitamin C.

NEARLY TWO CENTURIES before ascorbic acid (vitamin C) was isolated by Szent Gyorgyi in 1928 and identified four years later by King and Waugh as the antiscorbutic principle, a British Naval officer, Joseph Lind, massed convincing evidence that scurvy was a disorder of nutrition rather than a disease of occupational or infectious origin. He further concluded that it was a disorder of deficiency rather than excess and his "Treatise on the Scurvy" published in 1753 was responsible for the introduction of citrus juice into the diets of British seamen.¹

A recent survey of hospitals in the United States maintaining a pediatric residency revealed the incidence of infantile scurvy to be approximately one case for each 3,300 pediatric hospital admissions. The incidence of scurvy in Florida and California was of particular interest because of the large crops of citrus fruits grown in those states. Whereas in California there was only one case per 9,590 admissions, in Florida one case occurred for each 1,317 admissions.²

Schaffer was able to find only three completely verified cases of congenital scurvy on record. These occurred in children born to mothers whose diets had been so devoid of

vitamin C that neither her tissues nor those of her infant contained any stores of ascorbic acid.³

Although the exact function of Vitamin C in the body is not fully understood and its relationship to enzymes is not yet clear, it is known to be essential in growth processes and is found most abundantly in actively growing tissue. Vitamin C is probably necessary for all living cells. The effects of deficiency are noted chiefly in the bones, blood vessels and teeth. The pathological changes of scurvy are the results of marked deficiency. The most outstanding clinical manifestations are produced by hemorrhages due to increased capillary fragility which result from growth failure of connecting-tissue supporting structures and perhaps loss of cement substance between cells.⁴

The efficient and highly specialized food processing industry operating today provides many benefits which often are taken for granted. Consider the problems of the enlightened mother of several generations ago in her attempt to find adequate year around sources of vitamin C for her young. In the minds of many, vitamin C, the antiscorbutic factor, and freshly squeezed citrus juice became thought of as synonymous terms. With the advent of nearly universal use of supplementary vitamins in infants and in young children, the addition of fruit juice to the diet has become less important as source of vitamin C and has become more important as a dietary supplement. As a wholesome in-between-meal food that satisfies hunger temporarily but does not interfere with normal appetite, fruit juice has no comparable competitor. In addition the practice of giving vitamin C fortified fruit juice to sick infants and children is sound

for the requirements of both vitamin C and fluids are increased by infection.

Many types of "infant" juice (apple, (apple/grape, apple/pineapple, apple/prune, grape, orange, pineapple, etc.) are now available, and, recognizing the importance of ascorbic acid, processors have supplemented them with synthetic vitamin C. The usual amount of added ascorbic acid to "infant" juices is 50 mgm. per 100 cc. It has been shown that synthetic ascorbic acid is as well tolerated, utilized, effective and stable as the natural occurring.⁵

Little has been written or studied regarding the tolerance or acceptance of citrus juices by infants in early life. This study is an attempt to compare various observations in two groups of infants. The first group received "infant prepared" citrus juice (orange juice) and the second group received "infant prepared" noncitrus juice (apple juice).

Source of Patients

This study was carried out by two Board Certified Pediatricians in private practice for a period of two years beginning January 1960. Both full term and premature infants were included. For the most part, children who became ill enough to require medication, children of parents who had failed to follow instructions and those who failed to return for follow up evaluation and observation were excluded from the study.

Method of Study

The study was conducted on private patients who were born in the Winchester Memorial Hospital who came under the care of the authors between January 1960 and January 1962. As it was to be a long term study, no attempt was made to use alternate patients, but rather, mothers were told at random to give "infants" apple juice or "infant" orange juice beginning at age three weeks. For the first three weeks of life the child received only milk and throughout the study only five types of milk were used. The

milks used included breast milk, homogenized milk, evaporated milk, Similac and Enfamil. When the infants were brought to the office for their six week check up, data was recorded on index cards regarding six observations as noted by the mother for the three week period during which the child received only milk and juice. The six observations were as follows:

- (1) Appearance of rash.
- (2) Onset of colic.
- (3) Excessive flatus.
- (4) Change in stools.
- (5) Spitting or vomiting.
- (6) Acceptance of the juice.

During the six week period the child was given no supplementary vitamins and for the most part no solid foods. In a few cases unusually hungry babies were started on single grain cereals before the six week evaluation. If there was any question regarding untoward reaction associated with starting juice at three weeks of age and starting cereal at or about the same time, these cases were excluded. Other factors were held as constant as possible, including general skin care, type of soap, type of clothing, preparation of formula, etc. In general, then, the first three weeks of life the infant received only milk and the next three weeks received only milk and either apple or orange juice. At six weeks of age he was evaluated for changes that had occurred after the introduction of juice into his diet.

On occasion an infant would either not accept or had a definite intolerance to the initially designated type of juice and was "switched" to the other juice included in the study. When possible, observations were noted regarding the "switch" for possible significant trends.

Results

A total of 379 infants satisfactorily met the above specifications. In order to determine whether the recorded observations indicated any statistically valid conclusions, John R. Thompson and Company of Wash-

ington, D. C. performed a statistical study of the available data.

The data was tabulated on spread sheets (see table 1 and 2) and was assumed to relate to four parameters.

In order to increase the size of the sample used in reaching conclusions regarding the effect of the type of juice (and thereby increase the confidence level of the test) the occurrence of the disorders was hypothesized

TABLE 1
SUMMARY OF OBSERVED DATA, TYPE A

		RASH				COLIC				GAS				UNUSUAL STOOLS						VOMITING				ACCEPTABILITY						
		M		F		M		F		M		F		M			F			M		F		M		F				
		Y		N		Y		N		Y		N		Dia			Nor			Con			Y		N		Y		N	
		Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Dia	Nor	Con	Dia	Nor	Con	Y	N	Y	N	Y	N	Y	N			
ORANGE JUICE ONLY	Breast.....	1	10	0	6	0	11	0	6	0	11	0	6	1	10	0	0	6	0	0	11	0	6	0	11	0	6			
	Homog.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	Evap.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	Enfamil.....	3	45	1	43	2	46	3	41	3	45	1	43	4	44	0	0	44	0	1	47	1	43	3	45	1	43			
	Similac.....	0	9	0	10	0	9	1	9	2	7	0	10	0	9	0	0	10	0	0	9	0	10	0	9	0	10			
ORANGE JUICE ONLY	Breast.....	1	8	3	13	0	9	1	15	1	8	1	15	0	9	0	0	16	0	0	9	0	16	0	9	3	13			
	Homog.....	0	4	1	5	0	4	0	6	0	4	0	6	0	4	0	0	6	0	0	4	1	5	0	4	1	5			
	Evap.....	5	46	2	32	1	50	1	33	6	45	1	33	2	49	0	3	31	0	2	49	1	33	5	46	0	34			
	Enfamil.....	3	21	5	13	2	22	0	18	2	22	2	16	2	22	0	2	16	0	0	24	2	16	3	21	3	15			
	Similac.....	2	9	0	12	0	11	1	11	0	11	1	11	0	10	1	2	10	0	1	10	1	11	1	10	1	11			

M—Male
F—Female
Y—Yes
N—No

TABLE 2
SUMMARY OF OBSERVED DATA, TYPE B

			RASH				COLIC				GAS				UNUSUAL STOOLS						VOMITING				ACCEPTABILITY			
			M		F		M		F		M		F		M			F			M		F		M		F	
			Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Dia	Nor	Con	Dia	Nor	Con	Y	N	Y	N	Y	N	Y	N
APPLE AND ORANGE JUICE	Breast	A....	0	4	1	9	0	4	0	10	1	3	2	8	0	4	0	1	9	0	1	3	1	9	0	4	3	7
		O....	0	4	2	8	0	4	0	10	1	3	4	6	0	4	0	0	10	0	1	3	2	8	1	3	3	7
	Homog.	A....	0	1	0	2	0	1	0	2	0	1	0	2	0	1	0	0	2	0	0	1	0	2	1	0	1	1
		O....	0	1	0	2	0	1	0	2	0	1	0	2	0	1	0	0	2	0	1	0	0	2	1	0	1	1
	Evap.	A....	0	11	0	9	0	11	0	9	2	9	2	7	0	11	0	0	9	0	1	10	0	9	2	9	4	5
		O....	2	9	2	7	1	10	2	7	3	8	2	7	3	8	0	1	8	0	1	10	1	8	2	9	4	5
	Enfamil	A....	0	5	1	15	0	5	2	14	3	2	1	15	2	3	0	0	16	0	0	5	2	14	0	5	3	13
		O....	0	5	4	12	0	5	5	11	1	4	4	12	0	5	0	1	15	0	1	4	4	12	1	4	5	11
	Similac	A....	1	2	0	5	0	3	0	5	0	3	0	5	0	3	0	0	5	0	1	2	2	3	0	3	0	5
		O....	0	3	0	5	0	3	2	3	0	3	1	4	0	3	0	0	5	0	2	1	1	4	0	3	2	3

M—Male
F—Female
Y—Yes
N—No
A—Apple
O—Orange

- (a) Type of juice.
- (b) Type of disorder.
- (c) Type of milk.
- (d) Sex of the subject.

to be independent of, (1) the sex of the subject and, (2) the type of milk fed the subject. The validity of these hypotheses was then tested as follows: SEX—Table 3 pre-

sents the observed data grouped by sex and type of disorder observed. Of the 379 observations, 191 are of male subjects and 188 are of female subjects. If the hypothesis being tested is true, it would be expected that 191/379 of all observed disorders to be for males, and 188/379 of all observed dis-

will occur 70% of the time when the hypothesis is true.

Similar tests were run for each type of disorder and for all the disorders grouped together. In every case except one no significant difference existed between the sexes. The one exception is colic, which involves a

TABLE 3
TYPE OF DISORDER BY SEX

TYPE OF DISORDER	MALE		FEMALE		Total
	Observed	Expected	Observed	Expected	
Rash.....	18	19.2	20	18.8	38
Colic.....	6	11.1	16	10.9	22
Gas.....	21	19.2	17	18.8	38
Unusual Stools.....	15	12.6	10	12.4	25
Vomiting.....	10	12.6	15	12.4	25
Acceptability.....	17	20.7	24	20.3	41
No disorder.....	104	96.0	86	94.0	190
Total.....	191	.....	188	.....	379

TABLE 4
TYPES OF DISORDER BY TYPE OF MILK

TYPE OF DISORDER	BREAST		HOMOGENIZED		EVAPORATED		ENFAMIL		SIMILAC		Total
	O ¹	E ²	O	E	O	E	O	E	O	E	
Rash.....	8	5.7	1	1.5	11	10.5	15	15.3	3	5.0	38
Colic.....	1	3.2	0	0.8	5	5.0	12	12.9	4	3.0	22
Gas.....	7	5.7	0	1.5	12	10.5	15	15.3	4	5.0	38
Unusual stools	2	3.7	0	0.9	9	6.9	11	10.1	3	3.4	25
Vomiting.....	3	3.7	2	0.9	5	6.9	9	10.1	6	3.4	25
Acceptability.	7	5.1	3	1.6	11	11.3	16	16.5	4	5.5	41
No disorder...	29	28.0	7	6.5	52	52.8	76	77.8	26	25.0	190
Total.....	57	.....	13	.....	105	.....	154	.....	50	.....	379

¹Observed.
²Expected.

orders to be for females. For example, it would be expected that 19.2 of the 38 observed cases of rash would be for males and 18.8 would be for females. Actually 18 and 20 cases of rash were observed for males and females, respectively. The test of the hypothesis is whether the difference between the expected value (19.2) and the observed (18) data can reasonably be attributed to chance. Application of Chi-square testing procedures indicates that in the case of rash, a difference of at least as much as 19.2 to 18

difference that would occur by chance only five times out of a 100. However, it must be noted that the observed number of cases of colic (22) is less than the observed number of cases of each of the other disorders. This tends to reduce the reliance that may be placed in the data in the test. Therefore, even though a statistical significant difference exists in the observed data, it is felt that additional observations would tend to reduce the sex difference. We choose, therefore, to reject the test result and state that

the rate of occurrence of disorder is independent of the sex of the subject.

Type of Milk: The Chi-square test procedure was also used to test the hypothesis that the type of milk fed the infant had no significant effect on the rate of occurrence of the disorders. The observed data, grouped by types of milk is presented in Table 4. The test indicates that no significant difference

the physical condition of the subject with regard to "rash" and "acceptability" is dependent upon the type of juice taken. Significantly, higher rates of occurrence of these disorders were found (at the 2 and 5 percent level respectively) when the subject was fed orange juice. In addition, when the effect of the type of juice upon those cases which show "no disorder" was tested, it was

TABLE 5
TYPE OF DISORDER BY JUICE, TYPE A DATA

TYPE OF DISORDER	APPLE JUICE ONLY		ORANGE JUICE ONLY		Total
	Observed	Expected	Observed	Expected	
Rash.....	5	11.0	22	16.0	27
Colic.....	6	4.9	6	7.1	12
Gas.....	6	8.2	14	11.8	20
Unusual stools.....	5	6.1	10	8.9	15
Vomiting.....	2	4.1	8	5.9	10
Acceptability.....	4	8.6	17	12.4	21
No disorder.....	100	85.0	108	123.0	208
Total.....	128	.....	185	.....	313

TABLE 6
TYPE OF DISORDER BY JUICE, TYPE B DATA

TYPE OF DISORDER	DURING APPLE JUICE		DURING ORANGE JUICE		Total
	Observed	Expected	Observed	Expected	
Rash.....	3	6.5	10	6.5	13
Colic.....	2	6.0	10	6.0	12
Gas.....	11	13.5	16	13.5	27
Unusual stools.....	3	4.0	5	4.0	8
Vomiting.....	8	11.0	14	11.0	22
Acceptability.....	14	17.0	20	17.0	34
Total.....	41	.....	75	.....	116

exists between the observed data and the expected values. This was the case for each type of disorder and for all disorders treated as a group.

Tests for the Effect of Type of Juice

Once the subject's sex and type of milk were removed as significant parameters in the study, it was possible to group the data as shown in Tables 5 and 6.

The hypothesis of independence was refuted in Table 5. The analysis indicated that

found that a significantly greater number (at the 5 % level) of subjects that had been fed apple juice had no disorders.

The data of Table 5 also indicates that subjects fed only apple juice exhibited significantly fewer disorders (i.e., all six disorders treated as a single parameter) than did subjects fed only orange juice.

As further evidence of the dependent relationship between the type of juice taken and the physical condition of the infant, Table 6 shows the rate of occurrence of the

six disorders among infants fed first one type of juice and then the other. In every case the number of disorders observed while the subject was "on" apple juice was less than the number that would be expected if the rate of disorder occurrence were independent of the type of juice. In the case of "rash" and "colic" the difference was sufficient to meet the definition of significance. This was also true of all disorders taken as a group.

Conclusions

Based on the statistical study of the collected observations the following conclusions are offered:

- (1) The rate of occurrence of the six observed disorders is independent of the type of milk fed the subject and the sex of the subject.
- (2) The rate of occurrence of rash in subjects fed only orange juice is significantly higher than in infants fed only apple juice.
- (3) Significantly more subjects fed only apple juice exhibited no disorders than did subject fed only orange juice.
- (4) Significantly more subjects would not accept orange juice than would not accept apple juice.
- (5) In the case of subjects fed both types of juices, rash and colic disorders and all disorders taken as a group occurred at a significantly higher rate

when the subjects were being fed orange juice than when they were being fed apple juice.

Summary

Since citrus juice per se is no longer "essential" as a source of ascorbic acid in infants and young children, an attempt was made to compare its tolerance and acceptance with a non-citrus juice in 379 infants. The conclusions drawn from the statistical study on the observations would seem to indicate that the non-citrus juice (apple) was more readily accepted by the infants than the citrus juice (orange). In addition, those infants fed the non-citrus juice exhibited less disorders of rash, colic, excessive flatus, change in stools and spitting than those who received the citrus juice.

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ANNUAL MEETING

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Carisoprodol—Prednisolone in the Management of Arthritis

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The author has found that this combination of drugs has advantages in the treatment of arthritis. Relief of symptoms and absence of undesirable side effects were noted.

ARTHRITIS is a way of life. Joint disease, which is known to have existed in our ancestors before recorded history, today accounts for hundreds of thousands of lost working days annually and brings prolonged suffering to the individual. It is the prevalence and chronicity of arthritis which constitutes the principle challenge to the physician.

Treatment, has involved many drugs and modalities. Of the former, gold salts, salicylates, phenylbutazone, chloroquine derivatives and adrenal cortical steroids have been among the more common. While it is emphatically not the intention of this paper to survey current arthritis therapy, nevertheless, it is pertinent to consider some difficulties encountered with these drugs. Lockie and Riordan¹ (1958) noted a 20% greater chance of complete recovery or major improvement in 369 cases treated with gold salts. Sensitivity was found in the form of glossitis, dermatitis, albuminuria, gastrointestinal reaction, eosinophilia, colitis, tracheitis and purpura. While this treatment is undoubtedly helpful, various disadvantages are evident. Chrysotherapy has produced some favorable results in our hands; how-

ever, its limitations still suggest the necessity for use of other agents.

Time-honored salicylate therapy is known to us all as a dependable basis for treatment, subject to the higher dosage effects such as tinnitus and gastric irritation.² The chloroquines may be added to a particular regimen but are not usually employed as the sole agent. Phenylbutazone, like aspirin, has the pharmacologic properties of analgesia, antipyrexia and antiinflammation. Yet, undesirable effects prompt the physician to be watchful for blood dyscrasias, gastrointestinal and other complications during its use.

The widespread implications of adrenal cortical steroid therapy have been the concern of the rheumatologist for the last decade. Indeed, it would seem that this is the "steroid era". We are all familiar with the many considerations present in the decision to employ steroid treatment. As discussed in Hollander's excellent textbook on arthritis, it is in this disease that the problem of the intelligent use of steroids is paramount. Once that decision has been reached, however, it is the obligation of the physician to use as little as possible to control the constantly shifting constellation of symptoms. To quote Dr. Joseph J. Bunim: "Once the arthritis has come under control, repeated and untiring efforts should be made to reduce the 'maintenance' dose. The physician should never stop bargaining with the disease for lower dosage; any reduction—even a fraction of a mg.—is well worthwhile."³

Thus, while the innovations of the last several decades have greatly modified the therapy of arthritis, it is apparent that we should remain alert to the possibility of adding to our armamentarium in this area.

With such a view in mind the evaluation of the combination* of carisoprodol in conjunction with prednisolone was considered.

Carisoprodol (N-isopropyl-2 methyl-2 propyl-1, 3 propanediol dicarbamate) is a muscle relaxant and analgesic agent, which has been widely used in the management of musculoskeletal disorders.⁴ In our hands, and others,^{5,6} it has proved effective for relief of pain and muscle spasm in orthopedic conditions. Prednisolone has, of course, been widely used by rheumatologists.^{7,8}

From past experience with carisoprodol in arthritis, it was believed that its incorporation with prednisolone might accomplish the following therapeutic objectives:

1. Make available to the suffering arthritic the skeletal muscle relaxing properties of carisoprodol.
2. Provide the known anti-inflammatory steroid effects of prednisolone.
3. Facilitate treatment in the long-term illness where the patient's accuracy in taking the medication, and frequently his morale, declines as the number of capsules per day is increased.
4. Possibly accomplish a decrease in steroid dosage through concurrent treatment with carisoprodol.
5. Most importantly, determine if these combinations were more efficacious in managing the arthritic than previous regimens.

In a clinical trial of this nature, it is difficult, if not impossible to impose upon long-suffering patients all the limitations which we would like to have to establish formal statistical pairing. The alternative of placebo control was unsuitable because this study occupied almost a three year period. Inasmuch as the chronicity of arthritis had necessitated previous therapy in many of these patients, these historical data provided an adequate base line from which to view present carisoprodol-prednisolone therapy. Con-

comitant medication and complementary physical modalities were kept to a minimum.

Methods and Materials

The medication was supplied in white scored tablets containing 350 mg. carisoprodol and 2 mg. prednisolone. It was administered on an average of one tablet three times a day after meals and one at bedtime. Dosage was adjusted to the individual needs of the patient and reduced in most cases to one tablet three times daily as a maintenance dose.

The patients were selected from a private referral practice. A total of 42 cases are reported consisting of 26 rheumatoid arthritis, 10 osteoarthritis and six cases of mixed arthritis. (In the interest of evaluating this drug combination further, it was administered to nine patients who exhibited related orthopedic diagnoses. These will not be reported in this paper as their numbers are not large enough to justify comparison.)

Criteria for study included a history with special reference to past treatment, complete physical examination, pertinent laboratory data and x-ray examination.

Rheumatoid patients manifested a painful, progressive polyarthritis frequently involving symmetrical joints, with a predilection for the proximal interphalangeal joints of the hand. X-ray changes, typical clinical equivalents, such as joint stiffness upon arising, and appropriate laboratory work, (ESR and sleep cell agglutination) all combined to place the person in the rheumatoid category.

The diagnosis of osteoarthritis was made when the weight bearing joints were effected (knees, spine, hips), in older patients, and where symmetry of involvement was not pronounced. The irregular character of the swellings, x-ray changes and the absence of positive laboratory results or past history of a rheumatic episode, tended to place these people in this degenerative joint disease category.

Finally, we believe that placement of diagnoses in "waste basket" groupings is

*SOMACORT®, Wallace Laboratories, Cranbury, New Jersey.

neither helpful nor scientific; however, we do feel that the concept of mixed arthritis consisting of rheumatoid patients in whom the patterns of degenerative joint disease have emerged is justified.

The duration of treatment depended upon the initial severity of the disease, response to treatment, and other factors such as the past pattern of remissions and exacerbations. The data on duration of treatment appear in Table 1.

TABLE 1
POPULATION DATA

	Rheumatoid	Osteoarthritis	Mixed
TOTAL NUMBER...	26	10	6
Females.....	20	5	5
Males.....	6	5	1
AGE			
Youngest.....	23	45	54
Oldest.....	68	85	74
Average Age...	48	65	63
DURATION OF TREATMENT (Days)			
Least.....	27	14	32
Most.....	265	298	184
Average.....	131	81	74
MAINTENANCE DOSAGE (No. Tabs./Day)			
QID.....	2	3	..
TID.....	22	7	6
BID.....	1	..	..
OD.....	1	..	..

Results

Table 2 compares carisoprodol-prednisolone to previous therapy, which has been arranged in three major groupings for convenience in analyzing the data. Patient histories fell rather naturally into these groupings:

- 1. Those who had received salicylates alone.
- 2. Those who had received additional agents, such as phenylbutazone and/or gold salts.
- 3. Those who had been exposed to previous steroid therapy.

As might be expected, salicylates were common to all patients. Additional non-steroid medications were varied and did not lend themselves to individual comparison. Pre-

vious steroid therapy involved wide dosage ranges and use of prednisone, prednisolone, triamcinolone and hydrocortisone.

Clinical evaluation was based on relief of pain and stiffness, increased range of motion at the joint, decreased morbidity and improvement in the general well being of the patient. Final results were expressed in terms of complete relief, marked or slight improvement or no relief. The evaluation of the therapeutic response was established from progress notes as recorded in the clinical sheets.

Side effects were noted in eight patients. They were mild and easily reversible in all cases and consisted of sleepiness (5), dizziness (2) and rash (1).

Discussion

The combination of carisoprodol-prednisolone appears to have merit in the management of rheumatoid, osteo and mixed arthritides. Marked relief of pain, decrease in joint inflammation and increased joint mobility was noted in 73% of patients so treated. This represented a noticeable improvement over previous therapy which generally produced slight comfort in these patients. Clinically, we are of the impression that this form of medication was of value to the patient, affording convenience in dosage, demonstrable relief of symptoms and, most importantly, no evidence of troublesome complications so frequently encountered in steroid therapy.

In this regard, it was gratifying to note that substantial reductions in daily steroid dosage was accomplished, much in accordance with the work of Kolodny,⁹ who found that smaller amounts of corticosteroid were required for maintenance when the combined therapy (carisoprodol-prednisolone) was used. Thirty-five of the forty-two patients were maintained on three tablets per day. Thus, this 6 mg. of prednisolone represents significantly less than the usual average daily dose required when adrenal cortical steroids are used alone or in combination with salicylates.¹⁰

Summary

1. Forty-two patients with rheumatoid, osteo- and mixed arthritis were treated with carisoprodol-prednisolone in combination.

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TABLE 2

ARTHRITIS: 42 PATIENTS TREATED WITH CARISOPRODOL-PREDNISOLONE
COMPARED TO PREVIOUS THERAPY

PREVIOUS THERAPY	Salicylates			Salicylates + Non-Steroid Rx			Salicylates and Steroids		
	R	O	M	R	O	..	R	O	M
Number of Patients.....	4	4	3	10	6	2	12	0	1
Previous Therapy Results:									
Complete Relief.....	..	..	..	..	..	..	..	..	..
Marked Relief.....	..	..	..	2	..	..	..	..	..
Slight Relief.....	4	4	3	8	6	2	11	..	1
No relief.....	..	..	..	..	..	..	1	..	..
Carisoprodol-Prednisolone Therapy Results:									
Complete Relief.....	..	..	..	..	1	..	..	..	..
Marked Relief.....	3	4	3	8	2	1	9	..	..
Slight Relief.....	1	..	..	2	3	1	1	..	1
No relief.....	..	..	..	..	..	..	2	..	..

R—Rheumatoid.
O—Osteoarthritis.
M—Mixed.

2. Marked relief of symptoms were seen in 31 patients.

3. Minor side-effects, e.g., sleepiness, attributable to carisoprodol, were seen in eight.

4. No patients demonstrated undesirable evidence of adrenal cortical steroid therapy, probably because of the lower doses of steroids employed.

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The Use of Alpha Chymotrypsin in Cataract Surgery

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The use of this proteolytic enzyme in cataract surgery helps in the extraction of the lens and should cause no harm to the eye.

WE WISH TO REPORT on the cases of cataract surgery in which we have used alpha chymotrypsin during the past three years.

Alpha chymotrypsin is the proteolytic enzyme obtained from the pancreas by activation of chymotrypsinogen. It was first used successfully by Barraquer who discovered its present use by accident. He injected it into the vitreous to attempt the dissolution of a hemorrhage and found that the lens became dislocated. With further experimental work he perfected his present technique. The procedures we have used on our patients have been those advocated by Barraquer.

The following preparations of alpha chymotrypsin were used:

1. Alpha Chymar (Armour Laboratories, Kankakee, Ill.)
2. Quimotrase (PEVYA Laboratories, Barcelona, Spain)
3. Zolyse (Alcon Laboratories, Fort Worth, Texas)

There were two methods of extraction employed. The first was that of a fornix based flap, a limbus incision, and pre-placed or tract sutures using 6-0 black silk. The second method was that of a limbus based

flap, a scleral incision, and post placed sutures of 6-0 mild chromic catgut. A complete iridectomy was done in all but a few of the procedures. The oldest patient was 88 years and the youngest 16.

The technique of injection of the alpha chymotrypsin was that advocated by Barraquer. We used a 1:5000 dilution which was freshly prepared and used within 30 minutes. Following the iridectomy the posterior chamber was lavaged inferiorly, medially, and laterally with from 2 to 5 cc of the enzyme. We believe the placement of more importance than the amount of the enzyme. We did not lavage superiorly because we found we were able to employ a tumbling technique to better advantage if these zonules were not lysed too rapidly. A period of four minutes was allowed to elapse. Following this period of time the anterior chamber was irrigated with basic salt solution but no attempt was made to irrigate the posterior chamber. A majority of the lenses were found to break loose and push forward in approximately two to three minutes with those in the older age groups being the first to come forward and those in the younger age groups being the last.

There were 86 fornix base flap procedures done in which the Arruga forceps and the motor erisophake were both used. The complications encountered postoperatively were:

1. One patient developed retinal detachments of both operated eyes six months following the last operation. She had some macular degeneration of both eyes prior to surgery. There were also noted some peripheral degenerative changes of the retina. The detach-

ment of the retina of the left eye had a large operculum posteriorly but in the one of the right eye no hole could be found.

2. One patient had a filtering bleb post-operatively.
3. A patient with a narrow angle glaucoma had had a prior operation on both eyes with anterior sclerectomy and iris inclusion. Following the formation of cataracts the lenses of both were removed. She developed a clouding of the cornea of the left eye similar to Fuch's dystrophy. The right eye remained clear.
4. A patient with a corneal endothelial dystrophy developed a Fuch's dystrophy post-operatively.
5. Five patients developed shallow anterior chambers from three to six days following surgery. This was thought to be due to erosion and leakage around the sutures which may have been due to the action of the enzyme.

There were 50 extractions done in which the limbus based flap method was used. The complications encountered were:

1. One retinal detachment which was three months post-operative and occurred in a patient with a marked peripheral degeneration of the retina.
2. A post-operative hyphemia occurred which is not too uncommon in this type technique.
3. An intraocular infection which was thought to be endogenous and was cleared without sequelae. This patient was an 88 year old female and was on one gram of Chloromycetin Succinate every six hours at the time. She subsequently obtained 20/25 vision in the eye.

We have encountered no serious difficulties that we thought were directly attributable to the action of the alpha chymotrypsin. In our series we did not lose vitreous in

any case. Our incidence of retinal detachments was less than in the preceding years but we believe that the true figures on this will be determined only by future observations. There were no extracapsular extractions in either group except where a few capsules broke as they were being delivered. The capsular remnants were easily removed in these cases because there were no attachments. The corneal dystrophy encountered was not of high enough percentage to be of significance. We did have striate keratopathy following the use of the motor erisophake but this is a common occurrence with the use of any erisophake. Where the Arruga capsular forceps were used this was not a problem. On those cases in which a fornix based flap was used with a corneal limbal incision there was no difficulty encountered due to the lack of wound healing. On these cases there were five, seven, and sometimes nine black silk sutures used. On those cases in which we used the limbus based flap we used only three 6-0 mild chromic catgut sutures at the beginning. On these cases there was noticed a gapping of the wound in approximately three weeks. Close observation with the slit lamp showed the wound to be closed with a greyish tissue. There were no prolapses noted. Another factor noted was that the Tenon's capsule had a tendency not to adhere to the sclera but to roll up near the limbus. For this procedure we made two corrections:

1. We began using five sutures and sometimes seven to make a tight wound closure.
2. We began to suture the Tenon's capsule superiorly with two sutures to prevent the rolling down to the limbus.

Comments

Experimental work which has been done with alpha chymotrypsin to date reveals that there are a number of complications which develop from prolonged contact or increased concentrations of the enzyme.

Maumanee, Radnot, and Pajor, in their work with rabbits, demonstrated the degenerative effects of the enzyme on the retinal tissue. The enzyme in this case though was placed in the posterior vitreous where it would come in direct contact with the retina. We think the drug should not be used where there is a possibility of it coming in contact with the retinal tissue. This would include those cases in which the vitreous face has been broken, in which there has been a traumatic disinsertion of the vitreous base from the pars plana and peripheral retina, and in those where there is a marked liquefaction of the vitreous.

We believe that it should be used with caution on patients in the younger age groups but its use should not be excluded. The youngest patient operated on in this series was a 16 year old congenital cataract. The zonules broke very readily with three minutes of action by a 1:5000 solution of alpha chymotrypsin but the vitreous had to be peeled off the posterior capsule. There was no vitreous lost. Our experience in this phase of the use of the enzyme has been very limited. We are aware of the fact that the zonular attachments of this age group are very strong and that the action of the enzyme is not limited to the zonules themselves but also involves the filaments of the same origin that connect the anterior limiting membrane of the vitreous humor to the ciliary body and to the ora serrata. Several authors suggest that the enzyme should be limited in its action to a shorter period of time and possibly also to cut its strength to 1:10,000.

Many authors have described the development of marked striate keratopathy with the use of the enzyme. This has definitely not been our experience. The few that developed were in those patients on whom the erisophake was used in the extraction.

One of the most significant research projects that has been done is that by Ludwig Von Sallmann in which alpha chymotrypsin was infused into the anterior chamber of

rabbits for three minutes. The anterior chamber was then irrigated with normal saline. Partial or diffuse corneal opacity can follow the treatment and is often associated with defects in the endothelial layer. Diffuse corneal clouding persisting for weeks occurs when the damage is extensive.

Summary

We have presented 136 cases of cataract extraction in which the drug, alpha chymotrypsin, was employed to weaken the zonules and facilitate removal of the lens. Of the total, 86 were removed using a fornix base flap, corneal scleral incision, and employing black silk preplaced sutures; and 50 were removed using a limbus based flap, scleral incision, and employing catgut sutures post-placed.

The deleterious effects noted were those of:

1. Retinal detachments (2) in which there had been noted a prior retinal degeneration of the peripheral retinal tissue.
2. Delayed wound healing where an inadequate number of sutures had been employed.
3. Development of Fuch's dystrophy (2).

We think it is of significance that we had a low incidence of striate keratopathy, no vitreous loss, and a low incidence of retinal detachment.

The use of the enzyme definitely helps in the extraction of the lens and where used carefully and wisely should, from the evidence presented, to date, cause no harm to the eye.

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Viruses in Alaska

The social and economic development of Alaska has brought about a "drastic change" in the pattern of disease in that once-isolated area, according to a report in the February 9th *Journal of the American Medical Association*.

"Early in this century and previously, American Arctic populations were subjected to epidemics of highly contagious diseases by the advent of visitors from more southerly regions during the late spring and summer," Karl R. Reinhard, DVM, Bethesda, Md., wrote in the *Journal*. "Smallpox, influenza, measles, and other epidemic diseases were frequently traceable to direct contact with outside populations."

However, during the past 40 years, arctic regions have been opened up to development of resources, new inhabitation, commerce, and military activities.

"In Alaska, most of the small villages are in constant contact with the larger northern centers of population, and the latter exchange people constantly with the heavily populated southerly regions. Acute diseases are now a year-round experience in most communities in the Western American Arctic."

Dr. Reinhard compiled data showing that

polioviruses, Coxsackie viruses, and ECHO viruses are widely distributed in Alaska. Polioviruses, particularly Type 2, have been prevalent for a number of years.

A study of the degree of immunity to polio among Alaskan natives, based on a 1953-54 survey, showed a high level of resistance among 717 men in 47 villages of western and northern Alaska. Less than one per cent had no antibodies against any of the three poliovirus types. Overall, 87 per cent had antibodies against Type 1 poliovirus, 92 per cent against Type 2, and 62 per cent against Type 3.

Much more research is needed to determine the relationship between these viruses and human disease. It would be particularly desirable to learn whether they could be responsible for a serious and fatal disease among infants in native villages. Diseases with central nervous symptoms or respiratory failure are a common cause of infant deaths. These intestinal viruses also might explain the wintertime epidemics of stomach upsets among Alaskan villagers.

Dr. Reinhard is with the division of research grants, National Institutes of Health. He formerly was chief of the infectious disease program, Arctic Health Research Center, Anchorage, Alaska.

Listeria Monocytogenes Meningitis

Report of Three Cases in Adult Males

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Three cases of an unusual, sometimes confusing, form of acute meningitis, all in adult males, are described. Even with prompt and vigorous treatment the mortality is high.

LISTERIA MONOCYTOGENES¹ is a gram positive bacillary microbe morphologically resembling the nonpathogenic diphtheroid. It is capable of infecting humans as well as many species of wild and domestic animals.² Discovered in 1923 by Murray,¹ it was originally isolated during an epizootic among laboratory animals at Cambridge University. Veterinarians³ have long been familiar with the varied clinical manifestations attributed to this organism in domestic animals. In this country and elsewhere human infection most frequently involves the central nervous system producing acute meningeal inflammation with or without encephalitis, which may be accompanied by bacteremia.^{4,5} Several papers dealing with the clinical aspects of listeric infection as well as the bacteriologic characteristics of listeria monocytogenes, have been published in the past decade.^{4,5,7,8,9,10,11,12,13}

Three cases of acute bacterial meningitis caused by listeria monocytogenes have been observed and treated by the author in St. Luke's Hospital, Richmond, since 1957. A detailed description of these three patients, all adult males over fifty years of age, constitutes the basis for this report. Since lis-

teric infection is rarely seen in the adult and occurs predominantly in the newborn infant, it would seem appropriate to record the clinical course of these cases.

Case Reports

CASE I—E.B.O., a 58 year old dairyman, was admitted on December 9, 1957. He had been well until December 8th on which day he complained of headache, backache, felt feverish, and was quite drowsy. He was seen by his family physician who found his temperature to be 102°F. Codeine was prescribed and penicillin 600,000 units was administered intramuscularly. During the ensuing night he was nauseated and vomited. On the morning of admission he was very drowsy, appeared confused and irrational. He was seen again by his physician who recorded a temperature of 101° and referred him to the hospital.

The patient had always been a healthy, vigorous, active man who was particularly fond of hunting. Since the opening of the deer season on November first he had hunted frequently. During this period a number of ticks had attached themselves to his body and he estimated that at least five or six ticks had been removed since the hunting season opened. He went deer hunting December 7, 1957, and was in the woods all day.

Past history was noncontributory and he had never been a hospital patient previously.

Physical examination revealed a large, obese man of 58 years who was acutely ill. He was toxic, confused, and drowsy. The admission temperature was 103°F, pulse 67, respiration 20, and blood pressure 150/100. Breathing was irregular, suggestive of Biot's respiration. The face was flushed, skin warm,

and no petechiae were noted. On the upper abdomen there were two lesions the size of a pencil eraser consisting of a black crust surrounded by an erythematous margin. Similar lesions were noted in the left axilla, posterior aspect of the left upper arm, and in the left flank. All of these were said to

SPINAL FLUID DATA
CASE I

DATE	12/9	12/10	12/14	12/23	12/31	1/28
Pressure.....	370	221	210	160	110	200
W.B.C.....	1,020	710	660	84	41	25
Polys.....	58%	48%	85%	13%	12%	12%
Monos.....	42%	52%	15%	87%	88%	88%
Protein.....	340	.....	126	122	120	86
Sugar.....	65	.....	48	65	96	85
Culture.....	pos.	neg.	neg.	neg.	neg.	neg.

have been produced by ticks. The eyes and fundi were normal. Neurological examination revealed extreme nuchal rigidity, positive Kernig's sign, brisk and equal reflexes, and cloudy sensorium. The heart, lungs, abdomen, and extremities were normal.

The initial lumbar puncture revealed turbid, slightly xanthochromic spinal fluid under increased pressure, which contained 110 r.b.c. per cu. mm. and 1020 leukocytes per cu. mm., 58 per cent of which were polymorphonuclears. Chemical determinations were as follows: Protein 340 mgs. per cent, sugar 65 mgs. per cent, and chloride 640 mgs. per cent. Gram's stain of the centrifuged sediment disclosed no bacteria. Aerobic culture on Loeffler's media yielded a heavy growth of a gram positive bacillus within 24 hours. This organism was identified by Dr. H. J. Welshimer, of the Department of Microbiology, Medical College of Virginia, as *Listeria monocytogenes*, serologic Type IV. Sensitivity studies revealed growth inhibition by penicillin, erythromycin, streptomycin, bacitracin, tetracycline, and chloramphenicol. The blood culture was sterile. The admission leukocyte count was 24,300 with 94 per cent polymorphonuclears. Heterophile and febrile agglutinations were negative. Additional spinal fluid data are summarized in Figure I.

Treatment with penicillin, sulfadiazine, and streptomycin was instituted promptly. Twenty thousand units of penicillin were injected intrathecally on the day after admission. Penicillin administered intramuscularly totalled 82,200,000 units and intravenously 18,000,000 units. Streptomycin totalled 28 grams intramuscularly. Sulfadiazine intravenously amounted to 17.5 grams and orally 22 grams. Penicillin and streptomycin were continued for 20 days and sulfadiazine for seven days.

The response to treatment was striking. Forty-eight hours after admission the patient was rational, responsive, and able to take nourishment and medication by mouth, but he continued to be drowsy. On the fifth hospital day he was alert, and greatly improved although nuchal rigidity persisted and he complained of headache. Fever declined gradually, was below 100° by the twelfth hospital day, and entirely normal after the fourteenth day. Stiffness of the neck had disappeared completely by the fourteenth day. The physical examination was entirely normal by the sixteenth day at which time he had been afebrile for 48 hours, and was allowed out of bed. He was discharged on January 4, 1958, the twenty-seventh day after admission, the thirteenth day of normal temperature.

Examination three weeks later was negative. His only complaint was occasional slight headache. The lumbar puncture 24 days after hospital discharge revealed clear spinal fluid under normal pressure, which contained 25 leukocytes per cu. mm., 3 per cent of which were polymorphonuclears and 22 per cent mononuclears. Chemical determinations were as follows: Protein 86 mgs. per cent and sugar 85 mgs. per cent. Smear and culture of the spinal fluid were negative. Leukocytes numbered 9,150 with 64 per cent polymorphonuclears. The sedimentation rate was 18 mm. in one hour and the hemoglobin 13.7 grams. When examined four months later, the patient was in excellent condition, manifested no signs of neuro-

logical disease, was working regularly, and had no complaints.

CASE II—H.A.B., a 64-year-old male hardware and feed store clerk was admitted on December 4, 1958. Generalized muscle pain and fever developed on November 26, 1958, for which he took to his bed, consulted a physician who diagnosed "flu", and prescribed an antibiotic. Fever had disappeared by November 29, and the patient became ambulatory on November 30th. Two days later, on December 2, fever recurred. He complained of weakness, urinary frequency, ached all over and vomited. He rapidly became stuporous and confused. There was a history of heavy alcohol consumption (1 to 2 pints daily) for many years.

SPINAL FLUID DATA
CASE II

DATE	12/5	12/9	12/17
Pressure.....	290	250	300
W.B.C.....	143	59	10
Polys.....	13%	8	3
Monos.....	87%	51	7
Protein.....	105	70	47
Sugar.....	158	39	32
Culture.....	pos.	neg.	neg.

Examination revealed temperature 104°, pulse 98, respiration 13, and blood pressure 154/84. He was a huge man who was acutely and seriously ill, sweating, incontinent of urine, stuporous, mumbling incoherently. Pupils were pinpoint but reactive. Fundi were negative. Neck was rigid. Kernig and Brudzinski were positive. Reflexes were equal and active. There was no clonus or Babinski. The heart and lungs were normal. The liver edge descended three finger breadths below the costal margin and was round, firm, and irregular.

Spinal fluid was under increased pressure, contained 143 cells, 13 per cent neutrophils and 87 per cent mononuclears. The protein was 105 mg. per cent and sugar 158 mg. per cent. Gram's smear was negative. Culture was positive for *Listeria monocytogenes* serologic Type I, which was sensitive to

penicillin, erythromycin, dihydrostreptomycin, tetracycline, kanamycin, and chloromycetin. A leukocytosis of 16,600 with 89 per cent polymorphonuclears was present on admission. A blood culture was not obtained. Liver function tests indicated impairment.

Aqueous penicillin 500,000 units was given intramuscularly every two hours and sodium sulfadiazine 2.5 gms. intravenously every eight hours after an initial loading dose of 5 gms. Therapy with these two drugs was continued for the next eleven days. Intravenous sulfadiazine was discontinued as soon as oral administration was possible. The total dose of penicillin (all intramuscularly administered) amounted to 32,000,000 units, sodium sulfadiazine to 22.5 gms., and oral sulfadiazine to 29 gms.

Following the institution of antimicrobial therapy, improvement was rapid. Within 24 hours the patient was rational and more alert. The temperature fluctuated between 101° and 104° during the first 48 hours, between normal and 104° during the second 48 hours, but on the fifth day the highest recorded temperature was 100.6, and it remained normal thereafter except for a slight rise to 99.6 on day six. Nuchal rigidity and other signs of meningeal inflammation had disappeared by the seventh day, at which time the sensorium was clear. The spinal fluid cell count and protein decreased progressively and subsequent cultures were sterile. Examination the day before discharge revealed a protein content of 47 mgm. per cent, and a cell count of ten, three of which were polymorphonuclears and seven mononuclears. Additional spinal fluid data are summarized in Figure 2.

He was discharged, cured of meningitis, on the fifteenth day after hospital admission. He was reexamined on May 9, 1959, approximately five months later, when there was no evidence of residual damage to the central nervous system.

CASE III. S.E.B., a 63-year-old male local business executive and civic leader, was admitted on November 24, 1959. He was well

until the day previous when he had a shak-
ing chill and developed a severe headache
while at his office. That night headache per-
sisted. He became nauseated, passed several
watery stools, and complained of generalized
muscle and joint pain. The temperature rose
to 102°F. The next morning he vomited,
was drowsy and confused. Hospitalization
was advised.

ous gram positive diplobacilli which were
later identified as *Listeria monocytogenes*,
Serologic Type IV, on culture. The blood
culture was positive for this same organism.
In vitro study indicated that growth was
inhibited by penicillin, erythromycin, tetra-
cycline, chloromycetin, dihydrostreptomy-
cin, and vancomycin. Leukocytes numbered
17,300 with 91 per cent neutrophils. Uri-

SPINAL FLUID DATA
CASE III

DATE	11/24	11/26	11/28	12/5	12/22	12/30	2/11
Pressure.....	222	300	250	100	.....	136	100
W.B.C.....	4,200	2,000	200	51	.....	4	0
Polys.....	85%	89%	41%	45%	.....	.....	.....
Monos.....	15%	11%	59%	6%	.....	4%	.....
Protein.....	450	500	300	325	240	110	35
Sugar.....	<24	30	154	128	140	87	132
Culture.....	pos.	neg.	neg.	neg.	neg.	neg.	neg.

Examination on admission revealed a well
developed and nourished middle-aged man
who was acutely and seriously ill, complain-
ing of severe headache, confused, and having
Cheyne-Stokes respiration. The tempera-
ture was 103.4° (rectally), pulse 86, respira-
tion 24, and blood pressure 140/70. The skin
was clear, warm, and moist. Pupils were
pinpoint, but reactive to light. Fundi were
negative with flat optic discs. Sclerae were
not icteric. Nuchal rigidity was pro-
nounced, and he complained bitterly when
attempts were made to flex the head. The
heart and lungs were normal. The abdomen
contained right upper quadrant scars from
two previous surgical procedures, but was
otherwise negative. No organs were pal-
pable. The left leg was atrophic and foot
deformed as a result of childhood poliomye-
litis. The reflexes were active except for the
left knee and ankle jerks which were absent.
The Kernig was positive. No clonus or
Babinski were present.

The initial examination of the spinal fluid
disclosed cloudy fluid under a pressure of
222 mm. containing 4,200 leukocytes, 85
per cent of which were neurotrophils, 450
mg. per cent protein, and sugar less than 24
mg. per cent. Smear demonstrated numer-

analyses showed four plus albumen, a few red
blood cells and white blood cells, and a few
granular casts.

Massive dose therapy utilizing aqueous
penicillin intramuscularly and intravenously
and sulfadiazine intravenously was instituted
immediately. Forty-eight hours later the
patient appeared moribund being comatose,
hypotensive, and hyperpyrexia at 104°F
level. In desperation vancomycin, chloromy-
cetin, and prednisolone therapy was begun
and 20,000 units of aqueous penicillin were
injected intrathecally. There was definite
improvement during the ensuing 48 hours,
the temperature receding to 100°-99°, blood
pressure stabilizing, and the coma depth les-
sening. He began to sip water and respond to
painful stimuli. Lumbar puncture at this
time (day 5) produced clear xanthochromic
spinal fluid containing 200 cells (41 per cent
neutrophils and 59 per cent mononuclears),
and protein content of 300 mg. per cent.
No bacteria were observed on smear and the
culture was sterile. Sensorium cleared pro-
gressively, nuchal rigidity subsided, temper-
ature remained normal after the sixth day,
and the patient appeared to be recovering.
Blood cultures on the second, fourth, sev-
enth, and twelfth days were sterile. Spinal

fluid examination on the fifth, twelfth, twenty-ninth, and thirty-seventh days indicated clearing of the inflammatory process, and on each occasion it was bacteriologically negative. Objective clinical improvement paralleled the laboratory evidence. Leukocytes returned to normal. The patient was able to sit in a chair for short periods. He complained only of profound weakness. He remained afebrile from the sixth to the thirty-third day. Additional spinal fluid data are summarized in Figure 3.

Sulfadiazine was stopped after seven days, Vancomycin after seven days, chloromycetin after 16 days, and penicillin after 19 days. The total quantity of these agents amounted to 142,520,000 units of aqueous penicillin (118,500,000 units i.m., 24,000,000 units i.v., and 20,000 units i.t.), 45 gms. of chloromycetin succinate i.m., 13.5 gms. of vancomycin i.v., and 37.5 gms. of sodium sulfadiazine i.v.

The patient appeared to be making excellent progress toward complete recovery when an abrupt change in his mental state occurred on the night of December 20th, the twenty-seventh day of hospitalization. Marked lethargy, drowsiness, confusion, and urinary incontinence were noted. A coarse tremor of the extremities, muscle fasciculations of the trunk, nystagmus, masklike facies, stiff neck, monosyllabic answers to questions developed. Spinal fluid examination (29th hospital day) at this time revealed grossly clear spinal fluid containing a few red blood cells, protein of 240 mg. per cent, no white blood cells or bacteria.

The patient continued to behave abnormally, having periods of conscious perception interspersed with unresponsive staring. The temperature rose to 102°F on December 27th (the 34th day), to 103°F on December 29th (the 36th day), and remained at 102°F for the next 24 hours. Blood culture obtained on December 30th (the 37th day) was positive for Gamma Streptococcus which was sensitive to tetracycline, erythromycin, penicillin and resistant to chloromycetin and dihydrostreptomycin.

Jaundice developed on December 30th (the 37th day) the total bilirubin rising to 11 mg. per cent, receding to 5.8 mg. per cent on January 2, 1960, and to 1 mg. per cent on February 1, 1960. Terramycin intramuscularly was administered continuously through January 16th. The temperature receded to normal level by January first. Subsequent blood culture on January 6th was sterile. Nevertheless, the patient's general condition continued to deteriorate. He never regained consciousness, had to be tube fed and required indwelling catheter constantly. Marked flaccidity of all four extremities with atrophy, tremors, and fasciculations were present. He remained in this state until he died on February 11, 1960, the eightieth day of hospitalization. Lumbar puncture five hours before death revealed clear fluid under pressure of 100 mm. containing a few red blood cells but no white blood cells, and protein content of 35 mg. per cent. It was subsequently reported sterile.

An autopsy was performed three hours after death. The brain was very edematous, the gyri were flattened and the sulci narrowed. Multiple white filmy adhesions bound the lobes and gyri together, being most pronounced at the base. No gross or microscopic lesions were observed in sections of the brain. Additional findings included esophageal and gastric varices, diffuse fatty infiltration of liver but no evidence of cirrhosis; bilateral bronchopneumonia, generalized and coronary arteriosclerosis but no myocardial disease or arterial occlusions; bilateral patchy pyelonephritis, and chronic noncalculous cholecystitis.

It should be recorded that this patient had experienced massive hemorrhage from proven esophagogastric varices on seven occasions during the period January 1956 to September 1958. He was non-alcoholic, and had never demonstrated objective evidence of hepatic dysfunction or hepatomegaly. An unsuccessful attempt to establish a portacaval shunt was undertaken at the Univer-

sity of Pennsylvania Hospital on November 23, 1956.

It appeared that this man, although cured of meningitis, succumbed to hepatic failure and a terminal streptococcal bacteremia.

Discussion

Human listeric infection was first observed in 1932 by Nyfeldt of Denmark.⁵ Seventeen years later (1949) only 70 cases had been recorded in the world literature.⁵ During the five year period 1950 to 1955 more than 200 cases were reported.⁵ Prior to 1952 only 20 cases of listeric meningitis had been reported,⁷ but since then more than this number have been recorded in the United States alone. Welshimer has isolated *L. monocytogenes* from the spinal fluid of five cases of meningitis at the Medical College of Virginia Hospital since 1956.⁵ Three of these patients, two infants and an adult male, died from their disease.

In addition to central nervous system infection, *Listeria monocytogenes* has been responsible for a variety of other manifestations such as conjunctivitis, endocarditis, urethritis, septicemia, and a syndrome resembling infectious mononucleosis. The bacterium has been isolated from throat washings, the male urethra, the placenta, the female genital tract as well as the blood stream and spinal fluid.

Human infection is most often sporadic. Efforts to determine its source have been unsuccessful. Transmission from animals to man directly or indirectly is considered probable but the exact manner in which this is accomplished is unknown at this time. The consumption of infected unpasteurized milk is suggested as one possible route. Animals have been infected through the ingestion of contaminated water and oat silage.

Because of the chance that our first case was tick transmitted an attempt was made by Dr. Welshimer to isolate *Listeria monocytogenes* from deer ticks obtained in the area where our patient had been hunting. Although unsuccessful in his initial experi-

ments, Dr. Welshimer intends to explore further this possible mode of transmission. It might be mentioned that *Listeria monocytogenes* has been isolated from cattle ticks in Russia and from the larvae of a fly which infests the nostrils of infected sheep in New Zealand. At present the ultimate source and epidemiology of listeric infection remain a mystery.

There are no specific features which distinguish listeric from other forms of bacterial meningitis. It should be mentioned that the spinal fluid may reveal a mononuclear pleocytosis initially as was demonstrated by our Case II. This finding might conceivably lead to a mistaken diagnosis of a virus or aseptic infectious process. The very striking resemblance of *L. monocytogenes* to the diphtheroid, a nonpathogenic bacterium, may also confuse the diagnosis. Any diphtheroid or diphtheroid-like organism recovered from the spinal fluid should be considered *L. monocytogenes* until definitely confirmed or disproved by further study.

Prior to the introduction of specific chemotherapy, the mortality rate from listeric meningitis was approximately 70-80 per cent.⁶ Fatalities have been substantially reduced by modern antimicrobial agents, although four of eight cases reported from the Los Angeles County Hospital in 1957 died despite treatment with penicillin, sulfadiazine and chloramphenicol.¹⁰ Penicillin and sulfadiazine have been the most effective combination in European infections.⁴ It is important to determine the sensitivity spectrum of the causative bacterium in each case since different strains of *Listeria* vary in antibiotic susceptibility. While awaiting the results of sensitivity testing, it would seem appropriate to administer promptly large doses of aqueous penicillin and sodium sulfadiazine parenterally since most strains seem to be inhibited by these two agents.

Summary

Three cases of an unusual, sometimes confusing, form of acute meningitis are de-

scribed in this report. In each instance the patient was an adult male over fifty years of age who resided within a five mile radius of the Richmond city limits. Two recovered promptly without sequellae, but the third died of complications after a two and a half month illness even though the meningeal infection apparently was cured.

Listeria monocytogenes is a gram positive bacillus which was discovered more than 30 years ago. Since then the organism has been found throughout the world. It is responsible for a variety of infectious disease in a host of animal species. Previously, human infection had been reported rarely. Present evidence indicates increasing incidence or more frequent recognition by the medical profession.

Listeria monocytogenes most commonly infects the central nervous system of man, particularly the newborn, less often children and adults. The mortality rate, approximately 70 per cent in untreated cases, has been significantly reduced by modern antimicrobial therapy.

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Drug Information—Please

The nation's physicians annually make 62,000,000 phone calls to the nation's pharmacists—seeking information. It shows that the doctor is avid for information about prescription drugs. It shows also that he will not hesitate to turn to the pharmacist for it.—Dan Rennick, editor of *American Druggist*.

Acute Extrapyramidal Reaction Associated with Trifluoperazine

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Alarming symptoms may be produced by this tranquilizer as a toxic reaction.

THE OCCURRENCE of neurological side effects associated with trifluoperazine* (Stelazine) administration in large (10 to 20 mgm. per day) doses is well documented.^{1,2,3,4} Small dosage and short term therapy with this tranquilizer have been relatively free of toxic reactions.⁵ A case summary of the severe and dramatic side effects caused by Stelazine is presented.

Case Report

This 25-year-old married white woman was admitted to the Martha Jefferson Hospital, Charlottesville, on March 2, 1962, because of dyspnea, dysphagia and pain in her jaw, head and face. Six days prior to hospitalization, she contracted an upper respiratory infection with nasal congestion with mucopurulent discharge, a mild hacking cough and a severe headache involving the maxillary and frontal areas. Her local physician had seen her on two occasions, five and four days before hospitalization. Initially an injection of Demerol (Meperidine) had been given for her headache. At the time of the second visit, Darvon Compound® 1 capsule four times a day and Stelazine® 2 mgm. twice daily were prescribed. About noon on the day of admis-

sion, she suddenly began to have dyspnea, dysphagia, dysarthria and increasing pain in her face with difficulty in opening her mouth. These symptoms increased and occurred paroxysmally, but were not related to activity. Insect bites, recent injury or animal contact were denied. She had not had nor had any member of her family had seizures. Chills had not been present and the highest elevation in her temperature was 99.5° F.

Physical examination revealed a mildly obese, acutely ill woman whose speech was slurred and who had a nasal twang. She was unable to open her mouth more than about one inch. There was mild lower right facial and pharyngeal weakness. She complained of pain about the orbital, maxillary and jaw areas. This pain was accentuated by paroxysmal episodes during which the eyes deviated to the right with a horizontal nystagmus and the muscles of the face, neck and back contracted particularly on the left side. As these attacks of muscular hyper-tonicity began, this woman complained of difficulty in getting her breath, being unable to swallow, and of choking. As the intensity increased, she could not communicate with the examiner, but did not lose consciousness, bite her tongue, have incontinence of urine or feces, or become cyanotic. There was no weakness of the extremities or ocular muscles. The funduscopic examination, tendon jerks, and sensory examination were normal. There were bilateral positive Babinski signs, but Hoffman and Kernig signs were negative. Although the neck was stiff, the Brudzinski sign could not be elicited. The nasal and pharyngeal mucous membrane was injected and swollen. Blood pressure was

*In the form of Stelazine, Smith Kline & French Laboratories, Philadelphia, Pa.

82/64 and the oral temperature was 99° F. The other vital signs and the remainder of the physical examination were normal.

Laboratory data: The white blood count was 12,200 per cu. mm. with the differential showing 80% polymorphonuclear cells of which 19% were band forms. X-rays of the skull, sinuses and chest revealed both antra to be opaque. The cerebrospinal fluid pressure was 160 mm. of water and the fluid was clear without cells. Spinal fluid protein, chlorides, colloidal gold curve, Wassermann, and sugar were not remarkable. Blood culture drawn on admission was sterile, and the hematocrit, routine urine and Kline test were normal. Two throat cultures taken on the first and third hospital days grew beta hemolytic streptococci.

Hospital Course: About three hours after admission, because of her pain and anxiety, 1 cc. of Mepergan* was given hypodermically, and 1,000 cc. of 5% glucose in water was administered intravenously. By 8:00 P.M. the day of admission, her pain, attacks of muscular hypertonicity and trismus were much improved. At that time she was able to take oral medications and a soft diet. Diphenhydramine (Benadryl) 50 mgm. capsules and Phenobarbital capsules 16 mgm. with Dilantin 100 mgm. were begun. Her course was one of continued improvement so that all neurological findings had subsided by the fourth hospital day. Her maxillary sinusitis was treated initially with tetracycline and later with oral penicillin.

Comments

Extrapyramidal tract symptoms due to phenothiazine are primarily of these types, namely: (1) Parkinsonian Syndrome; (2)

*Mepergan contains meperidine hydrochloride (Demerol) and promethazine (Phenergan) 25 mgm. of each per cc. (Wyeth Drug Co., Phil., Pa.)

dyskinesia or dystonic reactions with involvement of the voluntary muscles and, also, at times with associated oculogyric crisis; (3) akathisia or motor restlessness often called by the patient as "the jitters". When phenothiazines are prescribed, the physician must maintain a high index of suspicion for any of these neurological side effects and promptly withdraw the offending medications at the first sign or evidence of toxicity. Some individuals, children in particular, are notoriously susceptible to small doses of phenothiazines. If extrapyramidal, toxic symptoms are of sufficient severity, drugs employed in Parkinson's Disease can be prescribed for those presenting this type of reaction. The case reported falls into the second category and was benefited by Benadryl (diphenhydramine). Akathisia can be controlled by sedation such as the barbiturates or meprobamate.

Summary

A case history of Stelazine (trifluoperazine) intoxication simulating tetanus has been described.

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Acute Hemolytic Anemia in Viral Hepatitis

Report of Two Cases

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Two cases of the rare occurrence of hemolytic anemia in viral hepatitis are reported. The importance of the recognition of this complication is obvious.

THE OCCURRENCE of hemolytic anemia in chronic liver disease has been well documented since the early reports of Lovibond¹ in 1935 and Watson in 1939.² Acute hemolytic anemia during the active phase of viral hepatitis, however, has not been widely recognized, although several such reports have appeared in the recent literature.³⁻⁷ The purpose of this communication is to present two such cases observed at the Medical College of Virginia Hospitals and to stress the importance of recognizing this rare but poorly understood phenomenon. The first case prompted a review of the records of all of the 192 patients with viral hepatitis from 1953 to 1960. The second case was uncovered during this review.

Report of Two Cases

Case 1: S.M., M.C.V. A-10963, a 16 year old boy was admitted to a local hospital on September 4, 1959, because of abdominal

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pain of one week's duration which has increased in intensity and had shifted to the right lower quadrant by the time of admission.

Physical examination revealed a blood pressure of 150/90, pulse 98, temperature 100.6 F., and respirations 24. The conjunctivae appeared pale. There was right lower quadrant tenderness with muscle spasm. The hemoglobin was 12.5 grams.% and the white cell count was 15,950/cu. mm. with 80% polymorphonuclear leukocytes. The patient underwent an emergency appendectomy, and the pathological specimen showed pyo-appendix. Postoperatively, the patient was treated with Combiotic and Kantrex, but his temperature rose steadily to 104 F. The hemoglobin at this time had dropped to 9.8 grams.% and the red cell count to 2,670,000/cu.mm., but the white cell count rose to 31,000/cu. mm. The bleeding and clotting times were normal. Urinalysis was negative except for 1+ albumin. Heterophile and febrile agglutination tests were also negative. Roentgenogram of the chest disclosed no abnormality. Four days later, the hemoglobin dropped further to 8.7 gram% with no apparent reason, and the white cell count rose to 43,000/cu. mm. with 90% neutrophils. At this time there was evidence of a mild jaundice with a direct bilirubin of 1.25 mg.% and a total bilirubin of 3 mg.%, and urine contained bile. Twelve days after admission, the hemoglobin was reported as 5.9 grams% with no evidence of bleeding. The patient was transfused with 2 liters of blood. Because of a spiking fever up to 105 F. during the following week, the antibiotics were replaced by Achromycin with no clinical improvement.

When the patient was transferred to the Hospitals of the Medical College of Virginia on September 29, 1959, his blood pressure was 130/80, pulse 120, temperature 102 F., and respirations 20. The sclerae were yellow tinged, but no petechiae were noted. The posterior cervical and submandibular lymph nodes were large, discrete and tender, and a lymphadenopathy was also present in the axillary and the inguinal regions. The lungs were clear and the heart was not remarkable. The abdomen was protuberant, tympanitic and diffusely tender, especially in the right lower quadrant. There was no rebound tenderness. The liver edge was felt 3 cm. below the right costal margin in the mid-clavicular line. There were no abdominal masses.

Laboratory data were as follows: Urine was dark with a specific gravity of 1.016, albumin 2+, sugar and acetone negative, and bile positive. A few bile stained granular casts were found microscopically. The hemoglobin at this time was 8.4 grams%, hematocrit 27%, red cell count 3,090,000/cu. mm., white cell count 15,000/cu. mm., and platelets 182,000/cu. mm. Direct serum bilirubin was 3.6 mg.%, and total bilirubin 13.6 mg.%, thymol turbidity 8 units, alkaline phosphatase 7.7 Bodansky units, serum protein 6.4 grams%, albumin 3.1 grams%, globulin 3.3 grams%, blood glucose 71 mg.%, blood urea nitrogen 27 mg.%, serum cholinesterase 0.35 delta unit, serum glutamic-pyruvic transaminase 1,400 units, serum glutamic-oxalacetic transaminase 2,700 units, cephalin flocculation test 4+. The blood film disclosed normocytic, slightly hypochromic red cells with slight anisocytosis, a few target cells, and occasional bands. A marrow study revealed a severe erythroid and myeloid hyperplasia. The reticulocyte count was 0.2%, and sickle cell preparations and Coomb's test were negative. Agglutination for typhoid O was positive 1:80, paratyphoid B positive 1:40, and agglutination tests for typhoid H, *Brucella* *Proteus* and heterophile were negative.

The patient's condition gradually deteriorated, with persistent spiking fever rang-

ing from 102 to 104 F. On October 3, his temperature dropped and he gradually became more restless and delirious and lapsed into coma. He was treated with parenteral fluids, streptomycin, chloromycetin, parenteral neomycin, vitamin K and intravenous and intramuscular hydrocortisone. His hemoglobin rose to 13.8 gm.% with a hematocrit of 43% following transfusions of 2,000 ml. of blood. The white cell count remained elevated and the serum bilirubin rose to a total of 27.7 mg.% with a direct bilirubin of 12.2 mg.%. The serum sodium was 135 mEq/L., potassium 5.7 mEq/L., chlorides 101 mEq/L., and CO₂ 18 mEq/L. Repeated prothrombin determinations were all in the range of 7 to 11%. Blood ammonia on October 6 was 170 gamma%. The spinal fluid examination on October 3 revealed a yellowish tinge to the fluid, with protein 20 mg.%, white cell count 6, and red cell count 66. The spinal fluid glucose was 145 mg.% and chlorides 120 mg.%. Biopsies of cervical and epitrochlear lymph nodes showed reactive hyperplasia and several blood cultures were reported as negative. Several stools were negative for blood. Roentgenogram of the chest was negative and a portable film of the abdomen revealed no abnormality. The condition of the patient steadily deteriorated and the patient died on October 6, 1959.

Autopsy findings: At autopsy, the liver weighed 1900 gm. The hepatic parenchyma was exceedingly soft and flabby. It was yellow with flecks of brownish-red, and showed petechial hemorrhages. The right lobe contained a regenerative nodule measuring 2 cm. in diameter. Microscopically, there was massive centro-lobular necrosis with subtotal destruction of hepatic parenchyma with some regenerative activity in the peripheral zones of the lobules (Figs. 1 and 2). A moderate inflammatory cell infiltrate was seen as well as bile duct proliferation in the centro-lobular and periportal areas. Kupfer cells containing brown pigment were abundant and many multi-nucleated giant cells were observed. The gross and

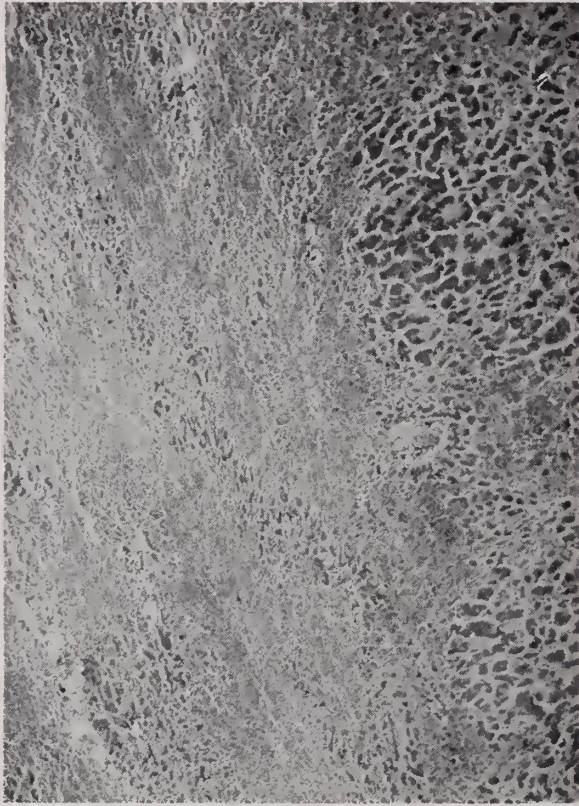


Fig. 1

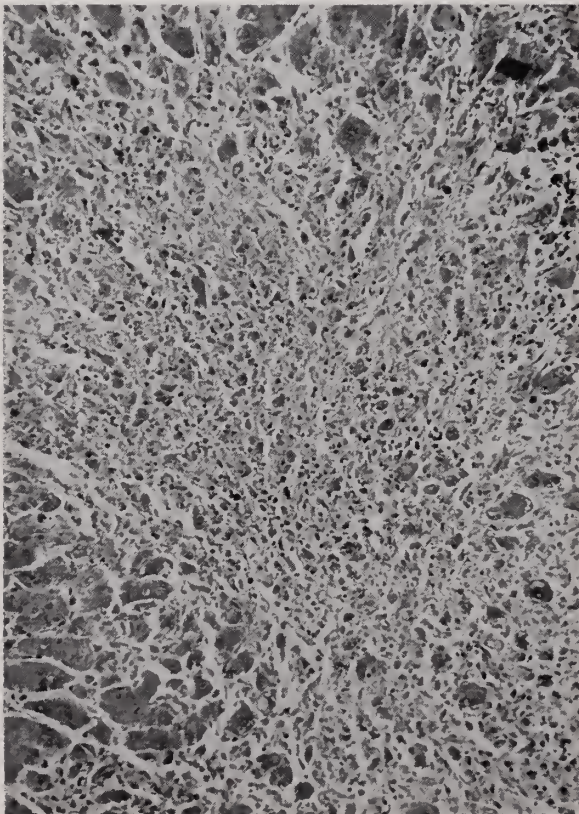


Fig. 2

microscopic findings were consistent with viral hepatitis.

Sections of the bone marrow revealed severe erythroid hyperplasia, predominantly due to an intense normoblastosis, although there was some increase in the myeloid elements (Fig. 3).

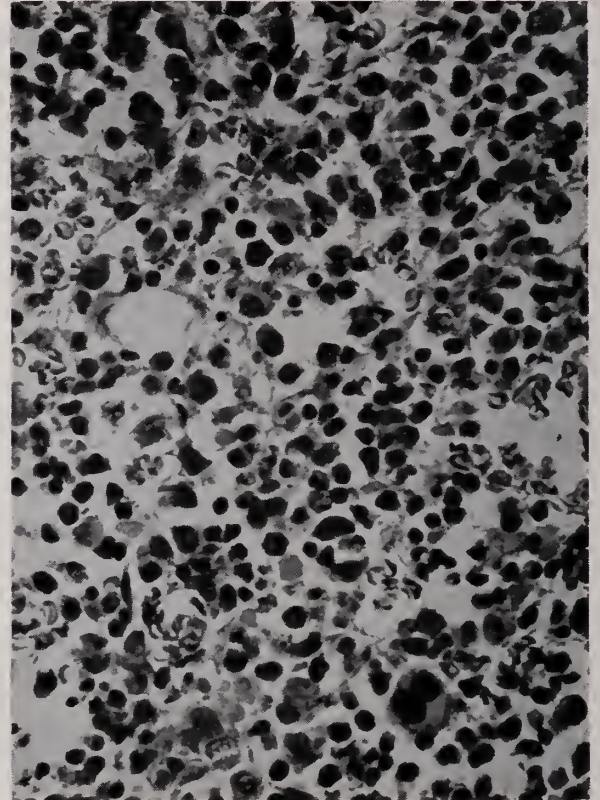


Fig. 3

Other significant findings included generalized jaundice, severe pulmonary edema, pulmonary congestion, bronchopneumonia, cholemic nephrosis and diffuse reactive hyperplasia of lymph nodes.

Case 2: J. H., M.C.V. B-32-27-89, a 14 year old colored male was admitted to the Medical College of Virginia Hospitals because of anorexia, nausea, mild epigastric pain, and jaundice of one month's duration. Three weeks previously he had been seen by his local physician who noted fever, jaundice and moderate hepatomegaly with tenderness in the right upper quadrant. A diagnosis of infectious hepatitis was made and the patient

was placed on bed rest and treated symptomatically.

He was transferred to the Medical College of Virginia on May 23, 1959. Physical examination on admission revealed a blood pressure of 110/60, pulse 100, temperature 103 F., and respiration 30. The patient was well hydrated, pale and jaundiced. The heart and lungs were normal. The abdomen was slightly distended, and a tender liver was palpated three finger breadths below the right costal margin.

Laboratory data were as follows: Hemoglobin 5 gm.%, red cell count 1,750,000/cu. mm., and white cell count 15,100/cu. mm. Total serum bilirubin was 10 mg.% with direct bilirubin 3.8 mg.%, thymol turbidity 8 units, alkaline phosphatase 12 Bodansky units, total protein 9.3 gm.%, albumin 2.4 gm.%, globulin 6.9 gm.%, blood glucose 65 mg.%, blood urea nitrogen 7 mg.%, serum cholinesterase 0.31 delta units, serum glutamic oxalacetic transaminase 122 units, and cephalin flocculation 2+. Blood film disclosed normochromia, slight anisocytosis and slight macrocytosis. A few target cells and normoblasts were also noted. A bone marrow examination revealed a diffuse reactive hyperplasia with predominance of the erythroid elements. The reticulocyte count ranged from 4 to 6% and Coomb's test was negative. Febrile and heterophile tests were also negative. Punch biopsies of the liver were performed which revealed insufficient material for diagnosis. Several stools were negative for blood. Sickel cell preps were negative and hemoglobin electrophoresis revealed a hemoglobin.

The patient was placed at bed rest and a symptomatic regimen continued. He had a prolonged convalescence punctuated with spiking fever and vague mild abdominal pain. The liver function tests showed gradual improvement and there was a steady rise in hemoglobin. The patient was not transfused while hospitalized but his blood picture returned to normal by the time of discharge on August 25, 1959.

He was lost to follow-up until July 16, 1961, when he returned with malaise, upper abdominal pain, and dark urine for 10 days and jaundice for three days. Physical examination revealed icteric sclerae and a tender abdomen. The hemoglobin was 12.2 gm.% and the white cell count 16,600/cu. mm. with 85% polymorphonuclear leukocytes. The total serum bilirubin was 3.6 mg.% with direct bilirubin 2.1 mg.%, alkaline phosphatase 20.4 Bodansky units, total proteins 7.9 gm.%, with 3.2 gm.% albumin and 4.7% globulin. The prothrombin time was 100%. The glucose-6-phosphate dehydrogenase activity of his red cells was within the normal range.* On August 22, an exploratory laparotomy disclosed a diffusely nodular greenish yellow liver with fibrous adhesions between the hepatic capsule and the diaphragm. A liver biopsy was obtained and a diagnosis of post-hepatic cirrhosis was rendered. The patient had no postoperative complication and was discharged improved on August 30, 1961, to be followed by the out-patient department.

Discussion

In the two cases presented, a severe anemia was discovered during the active phase of viral hepatitis in the absence of significant hemorrhage or bone marrow failure. In the first case, the hemoglobin level dropped rapidly from the initial level of 12.8 gm.% to the lowest level of 5.9 gm.% within 12 days of the onset of hepatitis. This rapid drop of hemoglobin concentration was accompanied by massive leukocytosis in the peripheral blood and marked erythroid (predominantly normoblastic) hyperplasia of bone marrow. The development of anemia was followed by a rise in indirect reacting serum bilirubin. Thus, it would seem most probable that the patient had a hemolytic anemia complicating viral hepatitis. The presence

*Performed by Dr. G. Hilkovitz, Department of Medicine, Medical College of Virginia. The normal glucose-6-phosphate dehydrogenase activity of erythrocytes may rule out a hemolytic anemia due to drug sensitivity.

of reticulocytopenia (reticulocyte count 0.2%) is unusual, but does not militate against such a conclusion. The development of a reticulocytopenia in the course of hemolytic anemia has been well documented.⁸

In the second case, the patient's hemoglobin level dropped to 5 gm.% from a normal level within a one month period from the onset of the hepatitis. This drop was accompanied by a moderate leukocytosis, anisocytosis, reticulocytosis, peripheral normoblastosis and severe erythroid (predominantly normoblastic) hyperplasia of bone marrow. Without blood transfusions, the hemoglobin level returned to normal three months later. The anemia in this case also can be best explained on the basis of a rapid hemolysis during the active phase of viral hepatitis.

Coomb's test was negative in both of our patients. In the previously reported instances this test may be negative, as in ours, or may be positive as in the cases described by Diaz-Rubio,³ Beickert⁴ and Bornemann and Michel.⁹

The literature regarding the occurrence of hemolytic anemia in liver disease is usually referable to chronic conditions^{1,2,10} or as a sequela of acute hepatitis.¹¹⁻¹⁵ An acute hemolytic anemia as a direct complication at the onset of viral hepatitis or during the peak of the infection has only recently been recognized. Diaz-Rubio³ reported two such instances in a group of 18 patients suffering from viral hepatitis in 1955. In the discussion of auto-immune complications from viral hepatitis, Beickert⁴ in 1957 quoted from the literature three such cases with a positive Coomb's test. In addition, he cited a case of pancytopenia and another case of thrombocytopenia as a complication of acute viral hepatitis. Darbon et al.¹⁶ also reported a patient who developed a thrombocytopenic purpura in the course of viral hepatitis. Raffensperger⁵ reported three cases of acute hemolytic anemia associated with viral hepatitis in 1958. This probably was the first and the only report in the North American literature.

Iványi and Gáll-Horváth⁶ in 1960, reported hematologic data on 155 patients suffering from acute viral hepatitis. Of these, three had a red cell count of less than 3,000,000/cu. mm., and four had 3,100,000 to 3,500,000/cu. mm. In addition, the authors found reticulocyte counts of 11% or higher in 29 of 30 patients, and suggested the existence of a hemolytic process in the acute phase of hepatitis. This was in accord with the findings of Bornemann and Michel⁹ who reported reticulocyte counts of 1.5% or over in 30 of their 40 patients.

The mechanism of hemolytic anemia in acute viral hepatitis is not clear, but several factors may be involved. Firstly, since there are a few instances of acute hemolytic anemia in which Coomb's test is positive, an auto-immune phenomenon must be considered. Secondly, a secondary hypersplenism due to infection may be responsible for some of the cases. This possibility was suggested by Raffensperger,⁵ and was proven to be operative in the case reported by Jandl et al.⁷ Thrombocytopenia and pancytopenia complicating some cases of acute viral hepatitis may also be the result of secondary hypersplenism.

Thirdly, the alterations induced in erythrocytes by virus, causing rapid destruction of red cells may also be a factor in view of certain experiments.¹⁷⁻¹⁹ Lastly, the possibility of an endogenous hematotoxic substance which causes lysis of erythrocytes should also be mentioned. Such substance may be produced by the breakdown of hepatocytes as suggested by Tyler.²⁰ It is probable that a combination of multiple factors may be involved in a given case in the development of hemolytic anemia associated with viral hepatitis.

The occurrence of overt hemolytic anemia in viral hepatitis must be a rarity. The fact that there has been no evidence of significant anemia in several comprehensive reviews of viral hepatitis strengthens this conclusion.²¹⁻²³

The recognition of this complication is of great importance in the differential diag-

nosis of unsuspected anemia during the course of viral hepatitis, and requires a careful and thorough hematologic evaluation with elimination of other possible causes of anemia, especially bleeding.

Summary

Two cases of hemolytic anemia associated with acute viral hepatitis are presented, and the importance of recognizing such association is stressed.

The mechanisms of the hemolytic anemia in viral hepatitis are as yet unknown, but several factors may be operative. These include auto-immune hemolytic processes, secondary hypersplenism due to infection, alterations of erythrocytes by virus and circulating endogenous hematotoxic substances produced by destruction of hepatocytes.

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Adolescent Outpatient Mental Health Services

About two-thirds of the patients served by mental hygiene clinics are children (un-

der 18 years of age). The largest proportion of this group are the so-called adolescent age. About 70% were 10 to 17 years of age. As is to be expected about 66% of the patients in the 10-17 year age group were boys.

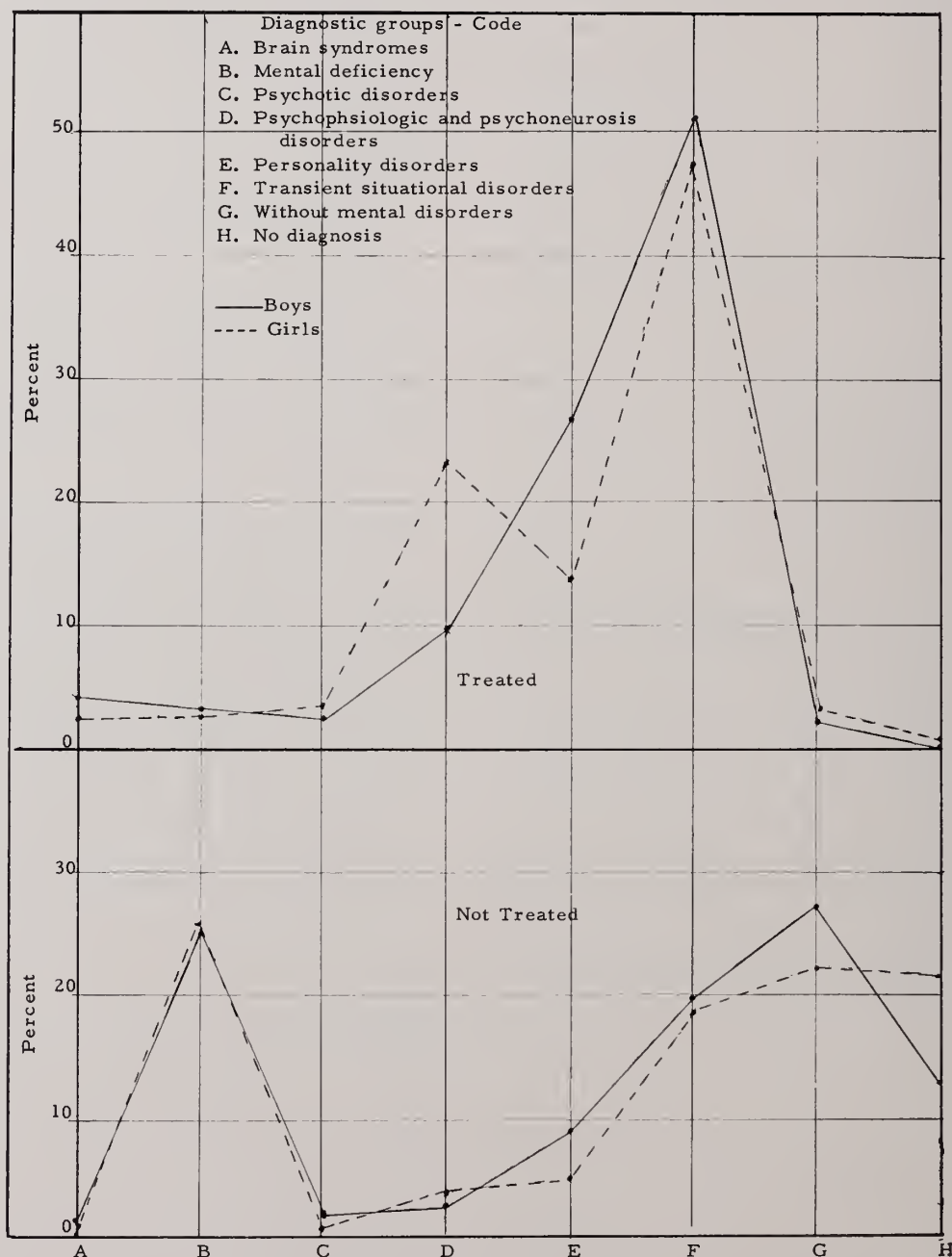


Chart I—Percentage distribution of adolescents terminated from clinic service by diagnostic groups, treatment status and sex.

However, a larger percentage of the girls received treatment, about 33%, and the boys about 25%. The untreated cases are made up largely of referrals from agencies, courts and schools for diagnostic evaluation.

There were approximately only 10% that were self or family referrals. The diagnostic distribution of the boys and girls had no significant difference except in the treated cases the girls had a higher

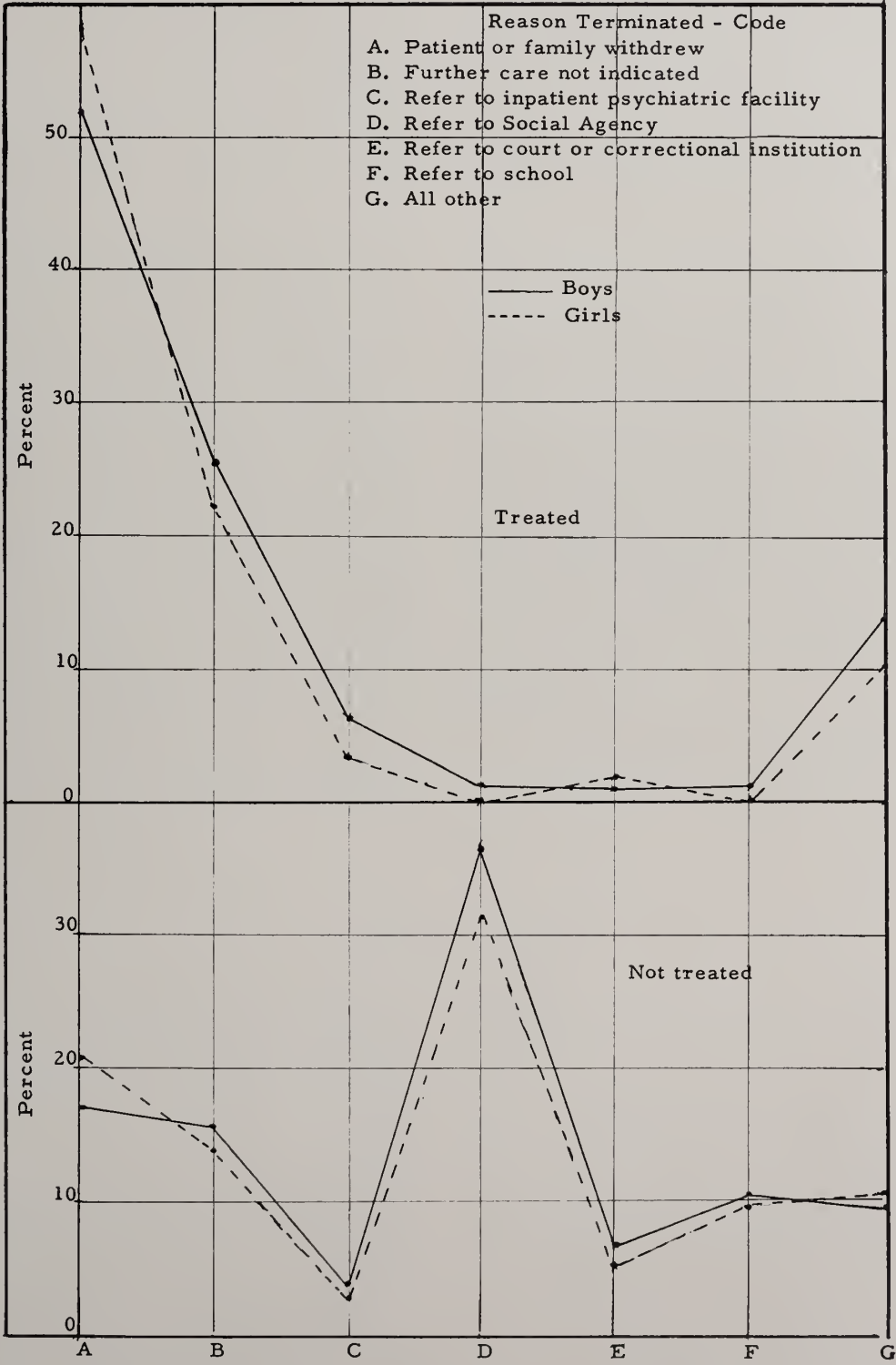


Chart II—Percentage distribution of adolescents terminated from clinic service by reason for termination, treatment status and sex.

rate of psychoneurosis and lower rate of personality disorders than the boys.

"Transient situational disorders" composed about 50% of the diagnosis of those treated. Chart I shows the distribution of the diagnosis of those treated and not treated. Mental deficiency was about 25% and "no mental disorder" about 28% of those not treated. Most of the mentally deficient and "no mental disorder" were referred to Social Agencies, many of these being referred by Social Agencies for evaluation as to mental condition.

When we look at the reason patients were terminated, a significant fact emerges in the treated cases. About 50%, both boys and girls, left clinic service before treatment service was completed. (Chart II) About 25% completed the treatment service and were terminated with no further care indicated. About 7% of the boys and 4% of the girls were referred to inpatient psychiatric facilities. The largest part of other reason for termination was made up of those that need further service but for some reason it was not available.

About 20% of the "non-treated" cases

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Approved for publication by Commissioner, Department Mental Hygiene and Hospitals.

did not enter treatment but were listed as "applications" or "intake only". These were mostly evaluation cases with referral back to the referring agency, better than 30% were referred to Social Agencies, with about 5% to courts and 10% to the schools. About 3% were referred to inpatient psychiatric facilities.

There were 85 boys and 34 girls from both the treated and non-treated groups that needed inpatient psychiatric facility care.

An area that should have further study is the 50% of the patients that started in treatment but withdrew or were withdrawn before treatment was completed.

This analysis of the adolescent group is for all the mental hygiene clinics in Virginia reporting to the Department. Among these clinics is the Mobile Psychiatric that is operated especially for children committed to the State Department of Welfare and Institutions Children's Division as delinquent or underprivileged. There were 37% of the boys and 30% of the girls in this analysis from this clinic. This creates an artifact as far as the individual clinic service is concerned but does develop a picture of psychiatric out-patient service given to the adolescents in Virginia.

Cancer of Thyroid

Encouraging results have been reported among patients with cancer of the thyroid treated with radioactive iodine following surgery.

Follow-up examinations of 152 patients showed that 73 were apparently free of the disease an average of 5 years after treatment, Drs. Thomas P. Haynie, Mohamed M. Nofal and William H. Beierwaltes, University of Michigan, Ann Arbor, Mich., said.

Writing in the February 2nd Journal of the American Medical Association, they said it appears at present that adequate surgery followed by radioactive iodine therapy may well free a substantial number of properly selected patients of their cancer.

In addition, there had been no recurrences among patients who had been free of symptoms for three years after therapy.

Diagnostic Laboratory Medicine . . .

Anticoagulant Therapy

PART I

Anticoagulants are valuable drugs used mainly in the prevention of occurrence or progression of thrombosis rather than therapy of such states. They act, to a certain degree, like drugs employed at present against neoplastic diseases by extending the useful life of the patient.

The two main types of drugs used are the direct acting Heparin and the indirect acting Dicumarol or its derivatives. These drugs differ in their effect on the three phases of the coagulation process. Heparin may be compared to a broad spectrum antibiotic because it acts on all phases of coagulation. That is:

- Phase I Blood thromboplastin formation
- Phase II Change of prothrombin into thrombin
- Phase III Conversion of fibrinogen into fibrin

Dicumarol, on the other hand, acts mainly on Phase II and to a lesser, but at times significant degree on Phase I.

The first part of this article will be concerned with Heparin. This drug slows down the speed of the coagulation process by virtue of its strong negative charge, acting as both an antithrombin and antithromboplastin. Among the beneficial effects of Heparin which are of particular importance in disease conditions might be listed some of the following:

- (a) decrease the adhesiveness of platelets
- (b) prevents the cycle of thrombus propagation
- (c) increase O₂ consumption and contractibility of the myocardium
- (d) causes vasodilation which in turn decreases the harmful effects of vessel

spasm surrounding an area of thrombosis

- (e) has an anti-inflammatory effect
- (f) has a lipemia-clearing action which increases fibrinolysis, a process normally retarded by lipids

Heparin also has a wide margin of safety. In case of overdosage, protamine sulfate or polybrene injected in a dose approximately twice that of Heparin, neutralizes its effect instantly. An enzyme, heparinase, eliminates (by way of the urinary tract) 3-5 units of Heparin/ml./min. from the circulation. Thrombocytopenia increases the patient's sensitivity to Heparin therapy because the antiheparin effect of platelets is reduced.

The properties described above justify why Heparin is preferred in cases of acute and chronic thrombotic states with the usual limitations in cases of concurrent bleeding tendencies. Dosage and route of administration of Heparin vary with conditions. For example:

1. Regional injections or continuous drip is best applied into a thrombosed blood vessel shortly after occlusion
2. In massive thrombosis, it may be used in forms of
 - (a) continuous i.v. drips of 2,000 to 3,000 units per hour
 - (b) 5,000 to 10,000 units i.v. every 4-6 hours
 - (c) 5,000 to 10,000 units i.m. every 4-6 hours
 - (d) 20,000 to 30,000 units injected deep subcutaneously every 12 hours
3. As a prophylactic measure preventing thrombus propagation in cases of small thrombi in non-vital areas in a dose of
 - (a) 10,000 to 20,000 units injected deep subcutaneously every 12-24 hour on a long term basis

- (b) 10,000 to 20,000 units injected deep subcutaneously 2-3 times a week

Because of short periods of maximal Heparin activity, few laboratory tests express satisfactorily the effect of Heparin. The commonly used determination of clotting time serves mainly as a control of overdosage of the drug. This is a crude test of low sensitivity and of poor reproducibility. A temporary prolongation of clotting to over an hour may not cause excessive bleeding. Other tests like Partial Thromboplastin Time and Recalcification Time are more reliable and less subject to error than the clotting time.

One major drawback of long term Heparin therapy is the expense of the preparation and need for injections. At present a new packaging of Heparin in a plastic tube with an attached needle (Lipohépinette) allows the patient himself to inject Heparin subcutaneously as do diabetics using insulin. New preparations of Heparin are much more potent and have higher activity per mg. of weight than the old ones. As a result, the new regulations of the Food and Drug Administration designate the strength of Heparin in units of activity rather than milligrams.

H. G. KUPFER, M.D.

Computer As Medical Consultant

A computer, programmed to act as an expert medical consultant, passed its test with flying colors. The problem tackled by the computer was diagnosing one of three thyroid conditions, overactive, underactive, or normal, on the basis of information supplied on individual patients. The computer came up with the same answer as the diagnosing physician in 258 of 268 cases, or 96 per cent, according to a report in the February 2nd Journal of the American Medical Association.

"This degree of accuracy approached the level of agreement to be expected between an expert consultant and a well-qualified diagnosing physician," John E. Overall, Ph.D., Manhattan, Kan., and Clyde M. Williams, M.D., Gainesville, Fla., who conducted the study, said.

If complete data had been available on all cases, there is every reason to believe that the level of agreement would have been even higher.

The use of computer programs may lead to a substantial increase in the accuracy of diagnosis especially in areas where the human capacity to remember and combine information is taxed by the need to consider large numbers of variables.

There is no direct means available to measure the degree of function of the thyroid gland. In making a diagnosis, the physician must consider about 20 factors, including tests and symptoms, which reflect the functioning of the thyroid gland to a substantial degree.

At the same time he must also weigh the frequency of occurrence of these signs in the three conditions. Since the average physician may see only 10 cases of thyroid disease a year, much time is needed to acquire reliable judgment on the probability of a certain factor being associated with one of the conditions.

In the study, the computer made its decision on the basis of the relative frequencies of 21 factors in 879 patients who had been diagnosed as hyperthyroid, hypothyroid or normal.

Dr. Overall is affiliated with the department of psychology of Kansas State University. Dr. Williams is affiliated with the department of radiology, University of Florida College of Medicine.

The study was carried out in cooperation with the Kansas State University Computation Center.

MACK I. SHANHOLTZ, M.D.

State Health Commissioner of Virginia

Congenital Heart Program at M. C. V.

Congenital heart disease has received increasing attention by physicians in the last 25 years. In 1938 Dr. R. E. Gross ligated the first patent ductus arteriosus. Repair of coarctation of the aorta soon followed. By the mid 1950's, extracorporeal repair of intracardiac defects was demonstrated by Dr. Lillehei to be possible and in succeeding years the risk from this procedure has decreased. Detailed studies for definitive diagnosis were mandatory. Physiologists, led by Bing, probed the depths of cardiac catheterization methods aiding enormously in accurate detection of a cardiac defect and its severity. Selective angiocardiology from both right and left sides of the heart as well as ciné techniques made it possible to visualize complex intracardiac defects in much greater detail. Attempts at homologous transplants of hearts in animals are so far not successful, but who can tell what the space age may bring!

What has Virginia done to keep up with such a pace? A children's heart program was organized by the State Health Department's Bureau of Crippled Children in 1940 at the Medical College of Virginia and has offered consultative services for children suspected of heart disease who are referred from anywhere in the State of Virginia. In the early years attention was focused on rheumatic fever, a prevalent problem, outnumbering the congenital cases nine to one. At this time, however, the new congenital

patients are three times as frequent as new rheumatic fever patients. The late Dr. I. A. Bigger had special interest in patent ductus arteriosus and coarctation of the aorta and repaired a number of these lesions at the Medical College of Virginia in the 1940's. In 1947 Dr. Carolyn McCue was appointed Clinical Director of the program with Dr. Reno Porter as Medical Consultant. Dr. Lewis H. Boshier, Jr., joined the team as Surgical Consultant in 1950, the same year a separate clinic for congenital heart patients was organized. A similar facility is now available at the University Hospital in Charlottesville under the direction of Dr. Francis Dammon and Dr. W. H. Muller, Jr.

A patient under the age of 20 years may be referred to such a clinic by any physician in the State who desires diagnostic or therapeutic assistance. Application is made through the local health department. The latter will evaluate the patient's economic need and see if insurance is available, determining thereby the ability of the parent to pay any part or all of the cost of the services needed.

Dr. McCue reports that surgery is now recommended by the Medical College of Virginia group on the following conditions at the optimum ages indicated:

OPTIMUM AGES FOR SURGICAL CORRECTION OF COMMON CONGENITAL DEFECTS

1. Coarctation of the aorta 6-12 years
2. Pulmonic stenosis with 3 years or over intact ventricular septal defect (dependent on right ventricular pressure)

This article was prepared by Dr. Carolyn M. McCue, Associate Professor of Pediatrics, Medical College of Virginia, and Clinical Director of the Congenital Heart Program at the Medical College of Virginia.

- | | |
|--|-----------------|
| 3. Aortic rings | Immediately |
| 4. Patent ductus arterio-
sus (uncomplicated) | 2 years or over |
| 5. Interventricular septal
defect with moderate
or large shunt | 5 years or over |
| 6. Interatrial septal defect
with moderate or large
shunt | 5 years or over |
| 7. Atrioventricular canal | 2 years or over |
| 8. Tetralogy of Fallot
(direct approach) | 5 years or over |
| 9. Transposition of great
vessels | Immediately |
| 10. Aortic stenosis
(severe) | 5-14 years |

The diagnosis of many of these defects can be made by careful history, physical examination, chest roentgenogram and electrocardiogram. Others will require hospitalization for cardiac catheterization and/or angiocardiographic investigation. The latter studies are currently being used on all patients who need repair of intracardiac defects so that more exact pressure measurements, oxygen determinations and indicator dilution techniques may be used to show the primary as well as any associated defects preoperatively. Dr. H. Page Mauck, Jr., joined the Pediatric Department at the Medical College of Virginia in 1960 and is currently doing physiologic studies on many small children.

Infants with congestive heart failure present special problems. A recent study at the Medical College of Virginia reported by Dr. McCue showed that over 200 infants have been seen in cardiac failure under two years of age. The basic defect in most cases is a congenital defect. While the total mortality is 56%, many of these can be salvaged by immediate therapy for cardiac failure, prompt diagnosis and surgical correction if the lesion is amenable, such as a patent ductus or coarctation. The following are conditions where cardiac surgery is advised in infants less than two years of age.

CONDITIONS WHERE CARDIAC SURGERY IS ADVISED IN INFANTS LESS THAN TWO YEARS OF AGE

- A. Corrective Procedures with Fairly Good Outlook
 1. Patent ductus arteriosus, malignant type or with congestive failure
 2. Coarctation of the aorta with congestive failure
 3. Aortic ring
 4. Severe pulmonic stenosis
- B. Corrective Surgery With High Risk in Infancy
 1. Ventricular septal defect with failure
 2. Atrioventricular canal
 3. Anomalous pulmonary venous return
 4. Aortic stenosis, severe
 5. Aorticopulmonary window
 6. Combined IA and IV defects
- C. Palliative Therapy
 1. Anastomosis of aorta or its branches to pulmonary artery is helpful if there are severe anoxic spells from:
 - a. Tetralogy of Fallot
 - b. Tricuspid atresia
 - c. Pulmonic stenosis in combination with other defects as transposition, single ventricle, truncus, dextrocardia, etc.
 - d. Transposition of the aorta with inadequate admixture.
 2. Banding of pulmonary artery helpful in recurrent uncontrolled failure from increased pulmonary flow (ventricular septal defect, persistent truncus arteriosus Type I, etc.)

No longer is it adequate to make a diagnosis of congenital heart disease. If the diagnosis cannot be made by simpler methods, at the proper age, special catheterization or other studies should be done. It is each physician's responsibility to see that all children in Virginia with congenital heart lesions receive optimum care.

Of Smog and Smoke

Fog in the Winter City

Dark and reluctant morning, what's amiss?
Hushed the accustomed grumbling of the traffic,
The air is heavy with foreboding whispers.
Venture not forth today—keep close, be wary!
Shun, if you may, the palpable blind embrace
Of the faceless killer, that with poisoned breath
Corrodes enduring stone, protesting flesh.
The cold bites to the bone, and bare trees,
Bearded and grey with rime, are like the dead
Waiting for Charon. Shapes half-seen and huge
Move in the gloom, as unpredictable
As muffled footsteps of malignant fate.
Storms we outface, and to the wintry skies
We are no strangers, yet we are afraid,
As once we were of plague and pestilence,
When the unknown in a cloak of man-made evil
Stalks through our streets.

AUDREY FIELD

Country Life—December 7, 1962

EVERY physician interested in polluted air, and all of us should be interested in this universal condition, should read the February issue of *New Medical Materia*. The first 21 pages are devoted to nine articles on various aspects of the 150 million tons of harmful impurities that contaminate the atmosphere over the United States each year. About one-half of this material consists of sulphur oxides, natural dust, industrial dust and ash while the remaining half is composed of pollutants peculiar to the various industries in the area in which they are found. Little, perhaps, can be done with the impurities in the first category but much can be done to eradicate the noxious gasses that are locally produced.

The authors of the articles in this symposium include United States Senator Harrison A. Williams of New Jersey; Dr. Luther M. Terry, Surgeon General of the Public Health Service; Jerry McAfee of the Gulf Oil Corporation and Dr. Frederick B. Exner, Seattle radiologist, who usually writes about fluoridation. Much can be accomplished by cities and counties in decreasing or eliminating smoke and smog. Pittsburgh,

formerly known as the "Smoky City," by an intensive anti-pollution program, markedly reduced their smoke, with a corresponding ten-fold increase in visibility within a decade.

Paradoxically, Los Angeles, and California generally, suffer from two factors in which their citizens take the greatest pride, namely the number of autos in that State, which now total well over nine million, and the many hours of bright sunshine they enjoy each year. The action of sunlight on the oxides of nitrogen and hydrocarbons brings about a "photochemical" smog that is as injurious as that produced by industrial operations. The California Motor Vehicle Pollution Control Board has approved automotive smog control devices which, within three years, must be used by every vehicle operating in certain areas of the State.

A table of pollutants is presented in Medical Materia with the inorganic solids and the organic matter in micrograms per cubic meter of air for 189 cities in this country. The average for the entire United States was 104 inorganic and 7.6 organic matter in the atmosphere. Six Virginia cities are listed. Danville and Hampton were well below the national average in both categories. Three tidewater cities, Norfolk, Portsmouth and Richmond had less inorganic solids than the United States as a whole and about the national average for organic matter. Roanoke alone exceeded the general level in each category by an appreciable amount. This, no doubt, resulted from the Magic City's various industries and the configuration of the surrounding terrain.

The late Dr. Douglas S. Freeman often referred to the James River valley and basin as the "Virginia Riviera" and never ceased to praise its salubrious climate. The figures released in this study appear to bear out the good doctor's estimate but we must not become smug over our lack of smog. In our zeal to bring new industries to the State we must guard against those that may poison our air. The danger is not confined to the soft coal regions of England and Pennsylvania where the hazard has long been recognized. A combination of auto exhaust, diesel fumes, industrial gas and fog on a windless day can occur anywhere in the United States and bring sudden and unexpected death to those who already suffer from crippling pulmonary disease. It has happened here recently and it will happen again if we do not intensify our efforts to purify our atmosphere.

HARRY J. WARTHEN, M.D.

New Members.

The following new members were received into The Medical Society of Virginia during the month of January:

Richard Earle deButts, M.D., Annandale
Hunter Marshall Gaunt, Jr., M.D.,
Winchester

Freeman Cornelius Hays, M.D., Danville
Magdolna Anna Iranyi, M.D., Alexandria
Thomas James Moran, M.D., Danville
John Francis Nowell, M.D., Arlington
Charles H. Peterson, Jr., M.D., Roanoke
Kazuko Kukita Price, M.D., Alexandria
William Henry Reese, Jr., M.D., Vienna
Ernest Boling Sayre, M.D., Richmond

Roanoke Committee on Arrangements.

Dr. John A. Martin has been appointed as chairman of the Committee on Arrangements for the annual meeting of The Medical Society of Virginia in Roanoke, October 6-9. Other members are: Scientific Exhibits—Dr. F. L. Angell; Technical Exhibits, Dr. R. M. Newton; Hotels and Halls—Dr. Lee W. Shaffer; Entertainment—Dr. John T. Walke; Press and Publicity—Dr. Margaret Glendy; and Golf—Dr. J. Edward George.

Richmond Academy of Medicine.

Dr. J. Robert Massie, Jr., has been named president-elect of the Academy, succeeding Dr. Charles Nelson, deceased. Dr. Adney K. Sutphin is the new second vice-president. Dr. R. Campbell Manson is president.

Virginia Council on Health and Medical Care.

New officers of the Council are: President, Dr. W. Linwood Ball; first vice-president, Dr. Mack I. Shanholtz; second vice-president, Mr. John M. Stacy; secretary, Mrs. Maynard R. Emlaw; and treasurer, Dr.

R. Blackwell Smith, Jr. All officers are from Richmond except Mr. Stacy who is director of the University of Virginia Hospital, Charlottesville. They will serve two-year terms.

Seminar in Psychiatry.

The Virginia Academy of General Practice and the Mental Health Committee of The Medical Society of Virginia are presenting a Seminar in Psychiatry for the General Practitioner at Westbrook Sanatorium, Richmond, from 1:30 to 4:30 on April 6th. This Seminar is made possible through an educational grant from Smith, Kline and French Laboratories.

Dr. Zigmond M. Lebesohn, Associate Professor of Psychiatry of Georgetown University School of Medicine, will discuss Psychiatric Emergencies and Dr. T. George Bidder, Associate Professor of Medicine of Western Reserve University School of Medicine, will speak on Drugs and the Disturbed Patient. Following the Seminar, registrants will be guests of Westbrook for a reception and dinner.

Category One Credit has been authorized by the American Academy of General Practice.

Drs. Gill and Harris.

Drs. Elbyrne G. Gill and Ronald B. Harris, Roanoke, addressed the Patrick-Henry Medical Society on the Contributions of the Eye Bank and Sight Conservation Society to the Profession. The meeting was held in Martinsville on January 18th.

Dr. William Edward Laupus

Has been appointed chairman of the Department of Pediatrics at the Medical College of Virginia. He will assume his duties on July 1st. Dr. Laupus is presently profes-

sor of pediatrics at the Medical College of Georgia. He is a graduate of Yale University in 1945.

American College of Physicians.

Eleven Virginia physicians have been designed as Fellows and Associates by the Board of Regents of the College. Fellows are Drs. Oscar A. Thorup, Jr., Charlottesville; Donald Shotton, Lynchburg; William R. Irby and Albert J. Wasserman, Richmond; and McKelden Smith, Staunton. Elected as Associates are Drs. Mary T. Lynch, Arlington; William B. Hunt, Jr., Charlottesville; John G. Graziana, Farmville; H. T. Haden, Richmond; and Richard M. Newton and Edwin J. Palmer, Roanoke.

Dr. Blake W. Meador,

Richmond, has been made a Fellow of the Scientific Council of the International College of Angiology.

Cardiac Symposium.

The Heart Association of Northern Virginia and the Washington Heart Association are again jointly sponsoring a Cardiac Symposium to be held on April 10th at the Marriott Motor Hotel, Twin Bridges. Drs. W. Proctor Harvey, Washington, and Joseph Beinstein, Arlington, are co-chairman. Among the speakers will be Drs. Charles K. Friedberg; Sol Katz; William Limoff; Bruce Logue; Bernard Lown; and Louis A. Soloff.

Annual Postgraduate Day.

The Roanoke Memorial Hospital, Roanoke, will hold its fourteenth annual postgraduate day program on March 21st. The program is Current Status of Cancer Cytology by Dr. Richard A. Malmgren, Chief, Cytodiagnosis, National Institutes of Health, Bethesda; Early Breast Cancer by Dr. Joseph H. Farrow, Chief of Breast Surgery, Memorial Hospital, New York City; Hema-

tological Problem by Dr. Stuart C. Finch, Hematologist, Yale University; Viruses and Cancer by Dr. Joseph W. Beard, Department of Surgery, Duke University; Leukemia in Japan Following Atomic Bomb Exposure by Dr. Finch; Endocrine Management of Metastatic Breast Cancer by Dr. Farrow; and Significance of Tumor Cells in the Blood; Dormant and Metastatic Cells by Dr. Malmgren. The morning session will be held in the Roanoke Memorial Rehabilitation Center Auditorium and the afternoon session and dinner will be at the Hotel Roanoke.

This program is approved for Category One Credit by the American Academy of General Practice.

Dr. Fred D. Maphis, Jr.,

Has been named chief of pediatrics at Wise Memorial Hospital, Wise. He had practiced at Strasburg but recently completed special training in pediatrics at the Medical College of Virginia.

Dr. R. M. Wilson,

Richmond, has been named "Man of the South" for 1962 by Dixie Business magazine. His selection entitles him to a place in the "South's Hall of Fame of the Living", which is limited to 200 living leaders. Dr. Wilson, who is eighty-two years of age, is a retired medical missionary of the Southern Presbyterian Church. He worked for many years among lepers at a leprosy colony at Soonchun, Korea, which he founded in 1909 and which since 1958 has officially borne his name. A church now being built in Korea has been named as a memorial to Mrs. Wilson who died last year. All of the Wilsons' seven children are active in medical work.

Practice Available.

An active established practice is available in the near future in a county in Southwest-

ern Virginia. There is only one other doctor in the county and the only expense involved is the purchase of equipment at very reasonable terms. A fully equipped and staffed office is waiting. Full details may be secured by writing #60, care Virginia Medical Monthly, 4205 Dover Road, Richmond 21, Virginia. (*Adv.*)

Obstetrician-Gynecologist

Wishes to relocate in Virginia for family reasons. Currently in private practice in Seattle. Age 39, university trained and board-eligible with teaching experience. Available July. All possibilities considered. Write Robert Hodges, M. D., 10624—226th Street, Southwest, Edmonds, Washington. (*Adv.*)

Opportunities Available in Virginia

For physicians as Directors of Local Health Department; salary range \$12,000 to \$15,675. Entrance salary dependent upon qualifications. Inservice training and post-graduate study opportunity available. Applicants must be American citizens, under 48 and eligible for Virginia licensure; liberal sick leave, vacation, group life insurance and retirement benefits. Write Director of Local Health Services, Virginia State Department of Health, Richmond 19, Virginia. (*Adv.*)

Office Space Available.

Westover Hills, Richmond. Medical Suites 500-1100 feet. New building. All utilities furnished. Contact George Gray, 644-0719, Richmond. (*Adv.*)

Obituaries

Dr. Walter Cleveland Caudill,

Past President of The Medical Society of Virginia, died in Pearisburg on January 18th after a long illness. He was a native of Alleghany County, North Carolina, and seventy-four years of age. Dr. Caudill graduated from the Medical College of Virginia in 1913 and located in Pearisburg in 1914. In 1924 he and his brother, Dr. E. L. Caudill, founded the St. Elizabeth's Hospital which served parts of five counties until the opening of Giles Memorial Hospital in 1950. He served as chairman of the Board of Trustees of the Giles Memorial Hospital for many years and was recently named chairman emeritus. Dr. Caudill was very active in the life of his community, having served as president of the Giles County Chamber of Commerce, President of the Pearisburg Lions Club, a charter member and first president of the Pearisburg Kiwanis Club, President of the Giles County United Fund,

and a former president and director of the Bank of Giles County.

In 1936 Dr. Caudill was elected to the Virginia House of Delegates and in 1944 he was made a member of the State Senate. He served in that capacity until 1956 when he announced he would not seek re-election. He served as floor leader, chairman of the Committee on Public Institutions and Education, and was a ranking member of the Finance Committee. He was also president pro tem of the Senate. Dr. Caudill also served as Chairman of the Overall Advisory Council of Needs of Handicapped Children for the Commonwealth of Virginia.

Dr. Caudill has been an active member of The Medical Society of Virginia since 1915. For a number of years he served as chairman of its Legislative Committee. He served as president in 1950-51. Dr. Caudill also was president of the Southwestern Virginia Medical Society.

His wife, a son, two sisters and two brothers survive him.

Dr. George Wesley Hooker,

Roanoke, died January 23rd. He was eighty-three years of age and a graduate of the Medical College of Virginia in 1904. Dr. Hooker had been a member of The Medical Society of Virginia for many years and was made a Fifty Year Member in 1954.

Two brothers survive him.

Dr. Bickerton Lewis Phillips,

Richmond, died February 2nd at the age of seventy-nine. He was a graduate of the former University College of Medicine, Richmond, in 1908. Dr. Phillips was a school physician for the City of Richmond and had practiced in the City for fifty-five years. He was a member of The Medical Society of Virginia, having been made a Fifty Year Member in 1958.

Dr. Perrow.

Resolution introduced in the Lynchburg Academy of Medicine Meeting.

BE IT HEREBY RESOLVED that the following memoirs be forever incorporated into the minutes of the

Lynchburg Academy of Medicine and that a copy be sent to the family.

James B. S. Perrow, beloved general practitioner, died at his home on Lawyer's Road at age 54 on October 21, 1962, of multiple myeloma. To the last his wish was to live to serve. Even though he knew months in advance of his diagnosis he never faltered in his determination to leave his practice and his home in the best state possible. He met death bravely and as a Christian. He was a temperate man and a great believer of out-of-doors activities. He was especially fond of hunting and fishing. Many of us who shared a day in the field with him were always amazed at his stamina and knowledge. He brought his spirit into the lives of his patients. He was a true general practitioner, diagnosing and treating as well as doing minor fractures and his own deliveries. He was very proud of the one thousand families in his active files and his patients were very loyal. He attended Birmingham Southern College and was graduated from the University of Virginia Medical School in 1935. After his internship at Jackson Memorial Hospital in Miami, Florida, and Watt's Hospital in Durham, North Carolina, he entered practice in Lynchburg in 1940. He served with distinction in the Army Medical Corps during World War II in China, Burma, and India, and then returned to Lynchburg. He was a member of the American Medical Association, the Medical Journal Club, Bedford Hunt Club, and was on the Official Board of Fort Hill Methodist Church. He was on the active staff of the Lynchburg General Hospital, Marshall Lodge Memorial Hospital, and Virginia Baptist Hospital.

JOSEPH L. PLATT, M.D.

JOHN WYATT DAVIS, M.D.

JOSEPH W. HOUCK, M.D.

Guest Editorial

In What Condition Is Your X-Ray Equipment?

DURING the past ten to fifteen years, a growing appreciation of the effect of ionizing energy upon tissue has greatly increased the significance of the above question. It is now realized that minute amounts of radiation, once regarded as inconsequential, may seriously injure individuals and, when absorbed in the gonads of people within their reproductive years, introduce harmful mutations into the genetic pool. The conclusion of the Federal Radiation Council is inescapable:

There is no level of radiation exposure below which there can be absolute certainty that harmful effects will not occur to at least a few individuals when sufficiently large numbers of people are exposed.

This does not mean that radiation should not be used for medical purposes, but it does mean that it should be used for justifiable reasons only, that the equipment producing the radiation should meet the latest generally accepted minimum safety standards, that the operators of the units and the people in adjoining rooms should be adequately shielded, and that procedures involving irradiation should be so performed as to minimize their biological risk.

In a State Health Department survey, it was found that as of July 1, 1961, Virginia physicians were responsible for the operation of 1167 x-ray units, dentists for 1122, a total of 2289 units. As the radiological safety of 1718 of these had not been checked for five years or longer, many physicians and dentists need to find the answer to the question, "In what condition is my x-ray equipment?" The Health Department is prepared to perform radiological safety checks, a request for which may be addressed to Mr. R. F. Pero, State Health Department, Richmond 19.

If you are uncertain whether you should take advantage of the service, note the following partial list of points stressed by the Atomic Energy Commission:

1. Like all machinery, x-ray equipment develops defects. Standard advice is to have at least an annual check (the State of Virginia requires automobiles to be inspected every six months).
2. As "permissible" radiation absorption levels for professional personnel and people working in areas adjoining radiological installations have been revised downward repeatedly, shielding that has not been reviewed during the preceding year should be checked.
3. X-rays used for medical diagnosis should be filtered through at least 2.5 mm. of aluminum; for dental roentgenography, through at least 1.5 mm. of aluminum.
4. The device used to control the size of the emerging x-ray beam should be set so as to restrict the maximum diameter to one no greater than needed for the purpose to which the unit is put. For instance, the beam of a dental unit should not exceed $2\frac{3}{4}$ inches; the emerging beam of a fluoroscope should be small enough so that when the lead glass screen is 15 inches from the panel, the beam is confined to the screen; etc.
5. It should not be possible to bring a fluoroscopic tube closer than 12 inches to the panel.
6. Dental units installed without a shielded position for the operator should have a timer cord at least 5 feet long.

If your installation definitely or possibly fails to meet one of these standards, the probability is that inspection will uncover other weaknesses which can be corrected just as easily as any of these. Their correction is something you owe to yourself, your personnel, your neighbors, and your patients.

GEORGE COOPER, JR., M.D.

EDITOR'S NOTE: Dr. Cooper is Professor of Radiology at the University of Virginia, and Chairman, Radiation Hazards Committee of The Medical Society of Virginia.

The Clinical Significance and Interpretation of Shortness of Breath

W. T. THOMPSON, JR., M.D.
Richmond, Virginia

Shortness of breath is one of the most frequently encountered and important symptoms in clinical medicine. Definitive, effective treatment is obviously dependent upon a careful evaluation and understanding of its causes and origins.

SHORTNESS OF BREATH is one of the most important and frequently encountered symptoms with which doctors are faced regardless of their specialty. It must always be fully evaluated, for it is invariably quite meaningful to the patient whether or not it signifies organic disease, and may be one of the first manifestations of serious illness. Furthermore, it may be extremely difficult to assess properly or to understand fully, for this is a subjective recognition by the patient that one of the basic requirements for life, breathing, is disturbed. The clinical situation must be considered in terms of the patient's interpretation of his discomfort as shortness of breath, his awareness of it and degree of disturbance by it, his general concern with all of his bodily symptoms, and the meaning the symptom has for him. This was succinctly stated by Dr. Dickinson W. Richards, "Nowhere in

medicine, perhaps, does the patient, whole and entire, so much need to be considered as in the field of respiration. Breathing is truly a strange phenomenon of life, caught midway between the conscious and the unconscious, and peculiarly sensitive to both."¹

As with any symptom, it must be perceived by the patient, i.e., reach his awareness, be interpreted and classified by him, and then be communicated to whatever person he feels is necessary, family, friend, or physician. Interpretation and classification is important, for some individuals are quite easily disturbed by simple discomfort, while others have a very high tolerance. Interestingly enough, some patients with the most pronounced organic limitation of breathing have the fewest symptoms, for they not only automatically limit their activity, adjusting it to the level that is relatively comfortable, but also become so used to the discomfort that they expect it and, after a time, are hardly aware of it. All of us have had the experience of asking a patient if he can climb a flight of stairs before becoming dyspneic only to have him answer that he doesn't know for he doesn't climb stairs, or when inquiring about the degree of discomfort of a patient with obvious increased work of breathing, have him deny any shortness of breath.

It is necessary for the physician to determine whether the shortness of breath is normal or abnormal, a physiological response or a pathological response to requirements for increased breathing. While the ultimate pathways of dyspnea may be the same in all individuals, the circumstances under which symptoms develop and their degree are not. Shortness of breath can be

Presented at the Second Interstate Scientific Assembly of The Medical Society of Virginia and the Medical Society of the District of Columbia, Washington, D. C., October 14-17, 1962.

From the Department of Medicine, Medical College of Virginia.

aroused in everyone if he increases his activity sufficiently. At some point he may determine that this is no longer the sequela of strenuous exertion, but is a disquieting limitation of his activity. This determination will be influenced by whether his occupation is a sedentary or a vigorous one, by whether his interests are contemplative fishing or strenuous tennis, and by how well he understands and/or accepts certain of the implacable aspects of the aging process.

The physician becomes involved and has to make medical judgments when the patient, perhaps after confiding in friends and relatives, decides to communicate his symptoms and conclusions to his doctor for final decision as to their meaning and significance.

Pathophysiology of Shortness of Breath

Shortness of breath may be defined as a sense of need for increased breathing. While the symptom may be simply described, i.e., "I become short of breath too easily or quickly", or "I can't get enough breath", its origins are poorly understood and often multiple. Wright made a very real contribution to the subject when he postulated that the sensation of dyspnea develops as a result of undue prolongation of inspiratory cell discharge in the respiratory center, arising either because of abnormally weak neutralizing impulses from the stretch receptors in the lung or from abnormally strong activity of the inspiratory cells of the respiratory center.²

Work at the Medical College of Virginia by Patterson, Wasserman, Mauck, and Hardie,^{3,4,5,6,7,8} and studies at other centers^{9,10,11} have shown that stimuli include such things as decreased arterial oxygen tension, increased arterial carbon dioxide tension, increased hydrogen ion concentration, pulmonary vascular engorgement, increased work of breathing, metabolites from exercising muscles including respiratory muscles, thermal stimuli such as increased temperatures or sudden exposure to cold, pain stimuli, psychic stimuli associated with many strong emotions, stimulation of defla-

tion receptors, and stimuli arising from the movements of joints and muscles. Experimentally, dyspnea can be induced by any one of the above if present to a marked degree. It may also be caused if several are present to a lesser degree but in combination, and may be relieved if one or more stimulus is removed even if others continue to be abnormal.

Interference with the release of ventilatory impulses or with the perception of this, i.e., with inhibition of the respiratory center, can cause severe dyspnea. Individuals with high spinal anesthesia may become markedly dyspneic when sensation from the thorax is lost even though respiratory muscle function is intact and ventilation is normal. Individuals with a chest binder interfering with full range of chest motion will quickly become short of breath on exertion even though all measured parameters of ventilation are normal. Individuals whose ventilation is controlled at a tidal volume and rate below that which they set themselves become extremely short of breath, but can be relieved by allowing them to take an occasional deep breath or sigh, even though the deep breath is of pure nitrogen. Immobility of the chest when no inhibitory impulses can develop is associated with smothering sensations even though normal blood gases are maintained by pressure breathing and no muscle work is being done.

Figure 1 attempts to illustrate this graphically. If there is an augmentation of the factors that stimulate the respiratory centers or a diminution in the factors that inhibit the respiratory centers, dyspnea occurs. If the reverse obtains, inhibition of respiration, even to the point of hypoventilation, develops. Normal respiration is dependent upon rhythmic balance between stimulation and inhibition of the respiratory center.

Evaluation

Like any other symptom, shortness of breath must be carefully characterized in terms of its duration, associated symptoms, precipitating factors, and degree. Has it

been present for years, gradual in onset, or has this been a recent explosive development? Has there been associated anxiety, cardiac or pulmonary symptoms, fever, weight loss, or weakness? What are the circumstances that cause it, difficult situations, seasons of year, infections, posture, exertion, and, if so, how much? Has the shortness of breath required any change in work or recreation?

lar failure; or anxiety may be a very normal response to life-threatening situations, e.g., left ventricular failure, asthma, acute exacerbation of chronic pulmonary disease, that are accompanied by dyspnea.

As precise an evaluation as possible should be made of the patient's personality structure as well as of the functional and structural integrity of his body systems. It is usually a matter of determining what part

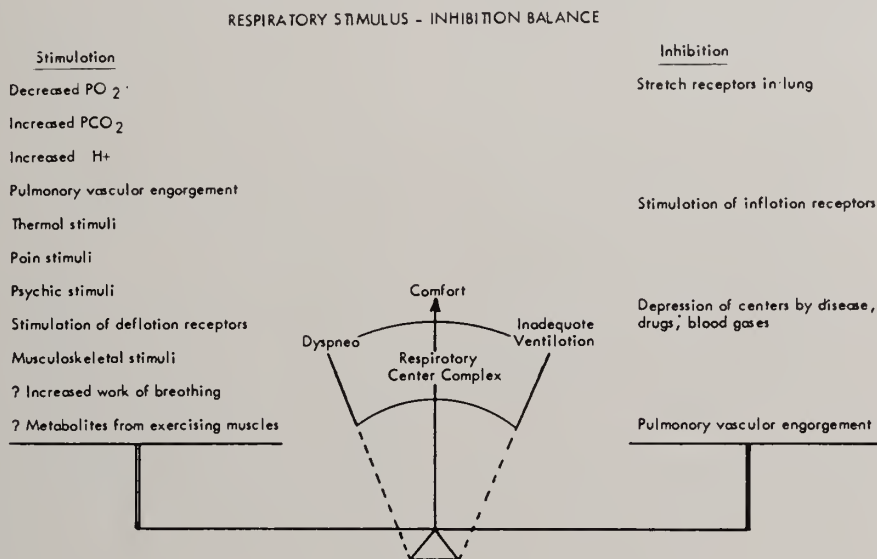


Fig. 1

Shortness of breath is most frequently of psychological, pulmonary, or cardiac origin with often varying combinations of these in any given case. It is necessary to differentiate these, or to evaluate the role that each contributes to the total clinical picture.

Psychological Shortness of Breath

Shortness of breath on a psychological basis must not be diagnosed simply because the patient shows evidence of nervousness or anxiety. A nervous person is subject to all of the ills, including those of the heart and lungs, that anyone else may have, and has the same inextricable homeostatic inter-relationships of body systems. Anxiety may be present in pure form producing shortness of breath, e.g., extreme apprehension and dyspnea of a young, healthy person awakened from a nightmare; anxiety may precipitate a very real bout of left ventricu-

psychologic and what part organic factors play in the clinical picture encountered, not that one is dealing with either a psychological or an organic sickness. The diagnosis of psychologically determined shortness of breath must be established by positive evidence of psychologic disturbance as well as by negative evidence for other body system disease. Both of the criteria must be met, not just one.

History may give evidence that the patient is one of a nervous family, for nervousness is often seemingly both inherited and contagious, that he or she has always been tense, high-strung, often introspective and concerned with body function, and that the pattern of response to stress has been one of somatic symptomatology.

Precipitating factors may be obvious, but not necessarily so, for patients vary greatly in their ability to withstand and accom-

moderate to stress. Predisposing and precipitating factors often bear an inverse relationship one to the other: a person with a vulnerable nervous system may develop symptoms readily; a stable individual may require severe emotional, socio-economic, or physical stress before such a response.

The constellation of symptoms often referred to as neurocirculatory asthenia may be present, characterized by easy fatigability, weakness, consciousness of heart action, tachycardia, shortness of breath, and vague chest pains. This may have been a life long reaction pattern, or may occur only when the patient has an intercurrent infection or is stressed in some other manner. There may be the frequent association of a variety of symptoms, including ones arising from other systems, i.e., headache, indigestion, backache, sexual disturbance, etc. It is obvious that this diffuse symptomatology cannot arise from organic changes in one system.

Acute episodes of shortness of breath may occur nocturnally, or unpredictably during the day. Frank anxiety may be experienced after the attack has begun, and there is often an emotional response out of proportion to the objective evidence of disability.

Symptoms of hyperventilation develop only in patients with acute episodes of overbreathing, for in chronic cases the secondary renal excretion of bicarbonate compensates for the lowered partial pressure of carbon dioxide, respiratory alkalosis does not occur, and symptoms do not develop. Faintness, dizziness, apprehension, numbness of face and lips, tingling of face and extremities, and, in some cases, frank tetany, therefore, are indicative of acute, episodic, overbreathing, usually psychogenic.

Vital signs, heart and lungs are normal in patients with shortness of breath of uncomplicated psychologic origin. There may be evidence of hyperventilation, respirations are often irregular or sighing, tachycardia is frequently present, and the patient may exhibit cold, clammy extremities. Laboratory and special studies are basically normal al-

though there may be minor electrocardiography changes.

Emphasis on the cardio-pulmonary manifestations of a psychological disturbance fails to consider the true and total problem that the patient presents. Use of terms such as neurocirculatory asthenia, effort syndrome, or hyperventilation syndrome may be confusing for the patient and tend to fix the symptoms or at least to delay the patient's coming to grips with the factors that are basic in the production of the disease. It is axiomatic, then, that a realistic treatment plan should be directed towards helping the patient deal more effectively with the psychologic origins of the disease, although simple explanation and symptomatic therapy are also necessary.

Pulmonary Versus Cardiac Origins of Shortness of Breath

Chronic obstructive pulmonary emphysema, particularly when cor pulmonale with failure and edema supervenes, is that form of lung disease most apt to be confused with primary heart disease. Episodic allergic asthma, specific infectious processes or malignancy involving the lungs and causing shortness of breath, or rarer lesions associated with diffusion abnormalities usually so manifestly affect the lungs that the differential is not difficult.

A patient is seen short of breath, orthopneic, and edematous, with rales throughout his lungs. A precise diagnosis is necessary if definitive therapy is to be instituted. On what findings does the differential diagnosis hang?

Emphysema is frequently characterized by a long history of frank pulmonary disease with "asthma", wheezing, cough, and gradually progressive shortness of breath on exertion. The cough becomes productive and all symptoms are worse with the bronchitis that is a frequent attendant of upper respiratory infections and sinusitis, especially in cold, damp weather. A frank history of allergies and sensitivity to dust may be obtained, and the patient may smoke

more than a pack of cigarettes a day. The degree of shortness of breath may be quite variable depending on the above factors so that a person who is incapacitated may be relatively free of symptoms and back at work when the weather clears or a cold is done.

The past history of a patient with heart disease may contain clues of the origin and type of heart involvement, e.g., rheumatic fever, angina pectoris or myocardial infarction, syphilis, hypertension. Improvement is usually related to specific therapy for congestive failure.

Dyspnea in patients with obstructive emphysema is of the "pulmonary" rather than the "cardiac" type. The patient with emphysema has no paroxysmal nocturnal dyspnea or orthopnea, the hallmark of the failing left ventricle, and, indeed, may prefer to lie flat. He may have episodes at night when he is awakened and sits up to cough and breathe better, but these are due to pooling of secretions, to post-nasal drip, to irritation of damp night air, or to inhalation of dust or allergens from the pillow. Most of the difficulty is wheezing and coughing with sputum production, not the desperate fighting for air of the patient with acute left ventricular failure who might even be driven out of bed and to an open window in search of relief. When cor pulmonale is established and/or blood volume increased he then becomes subject to orthopnea and paroxysmal nocturnal dyspnea.

The shortness of breath in the emphysematous patient is out of proportion to the degree of any congestion that may be present. He rarely has chest pain and, if it is present, is a vague discomfort or musculoskeletal in origin, rarely fitting the pattern of angina pectoris.

There is a striking difference in the physical appearance of the patient with shortness of breath of pulmonary or of cardiac origin. The patient with emphysema has an over-inflated chest, obvious difficulty on expiration, and is using accessory muscles of respiration at rest. An important finding

is hypertrophy of the anterior scalene muscles, for, while anyone who breathes hard will use the scalenes as evidenced by a firming up of the muscles under the examining fingers, hypertrophy is indicative of prolonged use of these muscles, seen usually in patients with chronic lung disease. Although the patient with left ventricular failure may be cyanotic, he is not usually so except during an acute attack, in contrast to the emphysema patient who may be cyanotic even at rest when the disease has progressed to an advanced degree. At this stage of the disease, he loses weight and is much more apt to be malnourished and even emaciated than the patient whose dyspnea is cardiac in origin.

The characteristic findings on auscultation are wheezes and prolonged expiration in contrast to inspiratory crackling rales and no difficulty with expiration seen in patients with primary heart disease. Pulsus paradoxus may be noted in patients with decreased pulmonary function and marked swings of intrathoracic pressure on inspiration and expiration.

When chronic lung disease has resulted in pulmonary hypertension, cor pulmonale develops. Although the heart sounds at the base may be obscured in a patient with an emphysematous chest, accentuation of the pulmonic second sound and, in some cases, development of a diastolic murmur of dynamic pulmonic valve insufficiency contrasts with similar findings at the aortic area in patients with left ventricular disease.

In cor pulmonale, due to the rotation and anterior enlargement of the right ventricle, the cardiac pulsations are evident by inspection and are heard best in the epigastric and substernal areas. Enlargement of the left ventricle presents to the left and downwards, and pulsations are seen and heard to the left of the mid-clavicular line and often in the sixth or seventh intercostal space.

Rhythm disturbances are much less common in cor pulmonale. Hydrothorax is indicative of both left and right ventricular

failure. Left ventricular failure may exist in a fairly pure form characterized by increased pressures in the pulmonary veins, and congestion in the lungs with little or no change in the peripheral veins. Right ventricular failure, on the other hand, is manifested by increased pressure in the systemic veins as evidenced by distended neck veins, enlargement of the liver, ascites, and edema. A systolic murmur heard near the lower sternum accentuated by inspiration, and pulsating neck veins and liver denote the development of tricuspid insufficiency.

The electrocardiogram may show changes of right axis deviation and right ventricular strain if cor pulmonale, left axis deviation and left ventricular hypertrophy and strain if primary heart disease is the cause of the shortness of breath.

The cardiac silhouette by x-ray in patients with lung disease is often surprisingly small, for as the right ventricle enlarges, the heart rotates clockwise so that the left ventricle is directed more posteriorly and the right ventricle presents anteriorly. The aortic knob is often small and pulmonary hilar vessels prominent. In contrast, left ventricular hypertrophy and enlargement is manifested by enlargement to the left.

Lung parenchyma of patients with chronic emphysema may show x-ray evidence of diffuse infiltration, cysts, increased aeration, scarred, flattened diaphragms, and hyperinflated chest. In patients with pulmonary congestion secondary to heart disease, there may be basilar and hilar congestion.

Routine laboratory studies may be of little value in differential diagnosis. Some patients with chronic lung disease, however, may have a secondary polycythemia. Because there is little disturbance with ventilation in patients who have left ventricular failure there is no difficulty in blowing off carbon dioxide, and, indeed, there may be a mild respiratory alkalosis. If present, this is reflected in a lowered carbon dioxide content of venous blood if there has been renal compensation and there are no other factors

disturbing acid-base balance. Arterial blood studies may show a mild arterial desaturation, lowered partial pressure of carbon dioxide, and elevated pH.

Patients with advanced emphysema will have reduced alveolar ventilation evidenced by an elevated carbon dioxide content of venous blood in the absence of complicating factors if there has been compensating renal retention of bicarbonate. Arterial blood studies are apt to show a more marked oxygen desaturation, and respiratory acidosis with elevated partial pressure of carbon dioxide and lowered pH.

Pulmonary function studies which may be helpful in differential diagnosis at a time when symptoms are not marked will show the classic pattern of obstructive airways, increased residual volume, and uneven ventilation in patients even with early or moderate emphysema. In contrast, studies in patients with shortness of breath due to heart disease may be normal or nearly so, and do not have any characteristic pattern.

Definitive, effective treatment is obviously dependent upon a careful evaluation and understanding of the causes and origins of the shortness of breath, and must be as different and varied as are the causes. Certainly the three major groups of shortness of breath discussed here must be differentiated if the patients' needs are to be fully met.

Summary

Shortness of breath is one of the most frequently encountered and important symptoms in clinical medicine. In essence, it results from a powerful stimulus to respiration or summation of lesser stimuli and/or an associated inadequate inhibition of the respiratory center. A number of seemingly diverse clinical conditions may give rise to shortness of breath, but psychologic, pulmonary, and cardiac origins are the most important and frequently encountered. Proper treatment requires a careful evaluation of the contributions of each factor to the total clinical picture.

Dr. John L. Patterson, Jr. has very kindly reviewed this manuscript and assisted in its preparation.

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Automobiles (And Now Rabbits) Have Replaced Horses

The effect of the economic motive can be detected in areas other than the obvious ones. Producing antipneumococcic serum from horses required many months and thus could not meet the demands of a changing market. Also this process was inefficient because the titer eventually achieved after many immunizations was not very high, and sometimes a horse would fail to produce serum of usable titer no matter how many times he had been immunized. Rabbits had been shown to produce antipneumococcic serums of high titer; they could be housed and handled more easily than horses; serum could be produced from them more quickly and thus the needs of the market could be followed more closely. Pharmaceutical manufacturers experimented with the production of commercial antipneumococcic serum from rabbits, found it feasible, and within a short time the production of antipneumococcic serum from horses was past history.—Harry F. Dowling, M.D. in *Archives of Internal Medicine*, Nov. 1962.

Regurgitation and Aspiration During Anesthesia

(The Mendelson Syndrome)

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The best treatment of aspiration pneumonia is prevention. When aspiration does occur, however, much can be done to minimize the damage by prompt and adequate treatment.

REGURGITATION and aspiration of gastric contents contribute significantly to the morbidity or mortality of patients undergoing anesthesia. Predisposing factors, techniques for prevention, a rationale for management of the situation, the Mendelson Syndrome, and a report of three cases are presented in this paper.

Incidence

The incidence of regurgitation and aspiration has been reported from 0.03% to 26.3%.^{7,13,16,22} The incidence is highest in obstetrical patients¹⁵ apparently due to the relatively poorer preparation and the greater likelihood of a full stomach as compared to general surgery patients. Culver, Makel, and Beecher⁷ administered intragastric Evans Blue Dye preoperatively to 300 general surgery patients and found by examining the pharynx and trachea for the presence of the dye in the postoperative state that 7% of this number had aspirated. This is the first report in the literature that defines a specific method used to determine the incidence of aspiration. Mendelson, in 1946, published the first article on regurgitation and aspiration, a study involving

over 40,000 deliveries.¹⁶ This has been referred to as the classic investigation on the subject, which in turn has been called the "Mendelson Syndrome". A study done on 926 general surgery patients by Berson and Adriani⁴ in which the authors administered intragastric Carmine Red and searched for evidence of the dye in the pharynx and the tracheo-broncheal tree postoperatively revealed that 127 (14%) of these patients regurgitated and 66 (7%) aspirated during anesthesia.

The mortality due to this complication has been estimated by Merrill and Hingson¹⁷ in a survey of major obstetrical hospitals of over 2,500,000 births in this country. These authors found that 1.5% to 2.5% of all maternal mortalities were due to regurgitation and aspiration. Edwards, Morton, Pask, and Wylie⁸ studied a series of 1,000 mortalities associated with anesthesia and found 110 (11%) due to aspiration, of which 71 cases were abdominal, 24 were nonabdominal, and 15 were obstetric.

From the available evidence^{13,15} there seems to be little doubt that with the exception of obstetrical cases, surgery of the upper abdomen is associated with the highest incidence of regurgitation during anesthesia.

Predisposing and Etiologic Factors

Whenever material is present in the esophagus or stomach, the stage is set for regurgitation and possible aspiration during anesthesia. The recent intake of food or drink prior to anesthesia is the most common factor associated with material in the stomach. Other frequent causes are ileus, intestinal obstruction, excessive gastric

secretions, hemorrhage into the upper gastro-intestinal tract, gastric dilatation due to artificial respiration, and delayed gastric emptying time. This latter condition is frequently associated with intestinal obstruction, gastric dilatation, abdominal distention in general, severe illness and may be of reflex origin following accidents or the onset of labor.¹⁸

Gastric emptying time during labor has been studied by Herscheimer, January, and Daversa,¹³ who showed by means of radiographic examination that there is no demonstrable delay in gastric function during labor in the absence of the usually prescribed premedicating drugs. However, Chase⁶ demonstrated that there was considerable delay in gastric emptying time in the obstetric patient when sedative and/or anticholinergic drugs had been given. Barbiturates alone produced little, if any, delay; meperidine, a slight delay; morphine, a moderate delay; and scopolamine produced a marked prolongation of gastric function which summated with the effect of the other drugs studied. This delayed emptying, in some instances, amounted to as much as 14 hours. The possibility of disaster can be further appreciated by remembering that induction time with inhalation agents will be slower than usual, with a prolonged second stage during which vomiting is more apt to occur, due to the decreased ventilatory excursions in the pregnant patient at term. It is well to remember that little, if any, gastric emptying occurs after the onset of any emotional disturbance or the beginning of pain.

Other factors have been implicated in the cause of regurgitation. There is general agreement that the likelihood of regurgitation is increased by a stormy or prolonged induction, especially if attended by coughing, airway obstruction, or laryngospasm. Painful stimulation during light anesthesia is a common factor, as is rough surgical manipulation of the viscera. The use of the lateral and Trendelenberg positions also appears to be associated with an increased inci-

dence of regurgitation.²² Regurgitation of small quantities of gastric contents may occur around a Levin tube left in place prior to anesthesia. One study indicated that regurgitation and aspiration were much more frequent when an endotracheal tube was used.⁴ However, pharyngeal packs were used instead of cuffs in this investigation, which may account for the fact that more than half of these patients who regurgitated went on to aspirate around their endotracheal tube. The early withdrawal of gastric and endotracheal tubes prior to the return of the cough reflex has frequently precipitated regurgitation which is then followed by aspiration.²²

Another factor to be considered is the efficiency of the cardiac sphincter. This valve acts primarily as a ball valve and depends largely on the angle of entrance of the esophagus into the stomach for its function. It will normally withstand high intragastric pressures without allowing regurgitation. The more acute the angle, the higher the intragastric pressure can be without regurgitation into the esophagus. (See Figure 1 A) The efficiency of the sphincter is un-

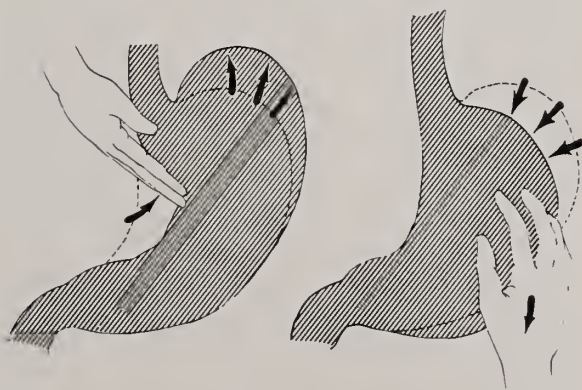


Fig. 1

affected by muscle relaxants, autonomic blockade, or local anesthetic agents but is rendered incompetent by gastric dilatation, widening of the angle of entrance of the esophagus, and obstruction to inspiration. (See Figure 1 B) The cricopharyngeus, on the other hand, acts mainly to prevent the entrance of material into the esophagus

from the pharynx and is relatively useless in preventing the escape of esophageal contents back into the pharynx.^{12,19}

From a statistical standpoint the type of anesthetic agent used is without significance in predisposing to regurgitation and aspiration.²

Clinical Signs

The clinical picture produced by the aspiration of stomach contents can be generally divided into two components, depending upon whether the majority of aspirated material is liquid or particulate matter. When solid material is aspirated, acute respiratory obstruction, asphyxia and death may rapidly ensue. It has been stated that death itself may be due to acute anoxia, associated with aspirated matter in the airway or laryngospasm, to reflex cardiovascular collapse, or to a later overwhelming pneumonia.¹⁸ Massive atelectasis may also occur, resulting in mediastinal shift, cyanosis, tachycardia, dyspnea, and dullness to percussion over the affected area.

When liquid material is aspirated, as is the case in the majority of instances, the presenting signs are not unlike those of an acute asthmatic attack.¹⁶ Rales, rhonchi, dyspnea, partial airway obstruction and cyanosis may occur within a matter of seconds. When only one lung is involved, it is more frequently the right, although both lungs are usually affected. X-ray examination in the acute phase shows a characteristic mottled effect, usually indistinguishable from patchy bronchopneumonia. Pulmonary edema due to chemical irritation may ensue, even when the preanesthetic cardiac reserve was normal. Secondary bacterial infection is to be expected. In untreated individuals who survive the acute episode, pulmonary fibrosis may result.⁵

Pathology

From studies done on rabbits in which sterile liquid vomitus was instilled in the trachea, the following picture has evolved:

A neutrophilic cellular response is widespread. Pulmonary edema, congestion and hemorrhage are seen, and the bronchial mucosa is de-epithelialized. The enzymes of gastric juice appear to play little or no part in the pathogenesis of aspiration pneumonia. Likewise, the few pathogens found in the gastric secretions bear no relationship to the primary changes seen but may relate to the associated complications. Regardless of composition, if the aspirated material is at or below pH 2.4, it will produce bronchopneumonia.²⁰ The typical pathologic findings of aspiration pneumonia have been produced in animals using 0.1 normal HCl or sterilized liquid vomitus, and the belief is held by some investigators that the entire pathology is due to HCl present in the aspirated matter.¹⁶

In all cases of human aspiration pneumonia, purulent bronchitis and bronchopneumonia are found, and in more than half, atelectasis is also seen.

Prophylaxis

The most obvious measure in the prevention of this complication is to avoid inducing anesthesia in a patient with a full stomach. This step is routinely taken when we allow a patient nothing by mouth after midnight prior to elective surgery. However, in emergency surgery, it is safer to assume the patient has food in his stomach and proceed accordingly.

A local or regional anesthetic technique is the method of choice when food is suspected in the stomach.²³ Many times, however, because of the site or magnitude of the surgery or condition of the patient, general anesthesia is mandatory.¹¹

If general anesthesia is indicated, one must attempt to complete a smooth induction and intubate the trachea without inducing emesis or regurgitation. Regardless of the magnitude of the surgical procedure, this is the only way to prevent aspiration. The technique of how to do this will vary with the skill and experience of the anesthetist.

For both the inexperienced and experienced anesthetist, oral intubation in the conscious patient under adequate sedation and topical anesthesia has several obvious advantages. The unanesthetized patient is most likely to be able to protect his own airway should vomiting occur at this time. It has been said that topical anesthesia of the upper airway may possibly allow aspiration more readily than in the normal state even in the conscious patient. In our experience, the airway in the lower trachea is not anesthetized, and hence, there is no diminution of the efficiency of the cough when initiated by material below this point. As soon as the tube is in place and the cuff inflated, general anesthesia with any agent indicated can be initiated with complete protection of the tracheo-bronchial tree against aspiration. When skillfully performed this technique is not as traumatic nor as harrowing an experience for the patient as a routine bronchoscopy.²¹ Morton and Wylie¹⁸ recommend a technique of slow induction with nitrous oxide, oxygen, and the later addition of ether as a relatively safe method for the beginning or occasional anesthetist. It has the advantages of adequate oxygen concentration, a non-irritating odor, a relatively transient second stage and a fairly long retention of protective pharyngeal and laryngeal reflexes. When the ether is added, adequate depth can then be reached in which an unhurried intubation can be performed. In our experience this technique is undesirable. For the experienced anesthesiologist, rapid induction with an intravenous thiobarbiturate, followed by a rapidly acting relaxant and intubation with the patient in about a 20° head-up position is a method advised by many.^{1,9,14,15}

Some authors suggest that some attempt should be made to empty the stomach prior to anesthesia in the emergency situation. This can be done with a large Levin tube and gastric lavage or by induced emesis with such a drug as apomorphine.^{6,11,16,18} A double lumen tube with inflatable balloon passed into the stomach will allow removal of the

majority of liquid contents and prevent the regurgitation of solid material. It should be remembered, however, that particulate matter is never completely removed by lavage and that no method can fully guarantee the stomach to be empty. Unless these facts are appreciated, serious difficulty can arise as a result of the anesthetist's feelings of false security.

Treatment

There are few conditions other than aspiration pneumonia in which successful treatment is more dependent upon early, prompt recognition. Once the diagnosis is made, treatment is begun at once. The oropharynx should be cleared digitally and by suction. With the patient in Trendelenberg position, the trachea is intubated. A rapidly acting relaxant may be used if needed. This will facilitate the administration of high oxygen concentration, tracheo-bronchial suction, and prevent the further aspiration of material present in the pharynx. The patient is then placed in a slight Fowler's position, and 10 to 20 cc. increments of sterile normal saline solution are repeatedly instilled into the endotracheal tube. Suction and ventilation are intermittently continued. If it is known or suspected that solid matter has been aspirated, bronchoscopy may be considered as soon as the operative procedure will permit.

The saline solution not only tends to wash the tracheo-bronchial tree but also serves to dilute the highly acidic stomach contents. Saline not removed by suction will be absorbed through the mucosa into the circulation. The inflammatory response which produces edema and bronchiolar obstruction is further prevented by the immediate intravenous administration of 100 mg. of hydrocortisone, followed by another 200 mg. over the next 24 hours. The drug is then gradually tapered off over a period of 5-7 days. Antibiotics may be added to the regimen, for while they do not affect the primary disease process, they are of definite value in the treatment of secondary bac-

terial infection which is the most frequent complication. There is evidence to indicate, however, that prophylactic antibiotics may at times not only fail to decrease the incidence of expected infection but often substitute resistant pathogens for the normally susceptible pathogens of the upper airway.¹⁰ A broncho-dilator such as aminophylline is often of value in the acute episode. Other supportive therapeutic adjuncts should be administered as indicated and include oxygen, expectorants and aerosols.¹⁵ Intermittent positive pressure breathing through the endotracheal tube or tracheostomy, if such is indicated, with a ventilator may be necessary as a life saving measure in the most severe cases.

It should be emphasized that adequate lavage of the tracheo-bronchial tree is paramount in determining the success of therapy. One can hardly be too vigorous in the immediate and repeated washing and suctioning of the airway.

Bannister, Sattilaro, and Otis³ offer evidence that the introduction of a diluent solution into the lungs following aspiration of gastric juice is not only useless but may be harmful. Their work was done in rabbits, into whose trachea was instilled HC1, 4 cc. per kilogram at pH of 1.82. Two minutes later normal saline, 3 cc. per kilogram was added and the animals sacrificed in 48 hours. The pathologic results revealed severe necrotizing lung lesions. The dose of HC1, 4 cc. per kilogram, in rabbits is equivalent to 280 cc. in a 70 kilogram adult male. This quantity of material is considerably more than is commonly aspirated clinically in humans. The quantity of the diluent solution was $\frac{3}{4}$ of the aspirated acid. The amount of irrigation solution recommended by us is several times the aspirated volume. Since all their animals were sacrificed in 48 hours, it would seem possible that the full extent of the pathologic changes may not have occurred. The steroid suppression of the inflammatory response may have delayed damage resulting from lack of tracheal

lavage which might have developed at the end of a week.

Report of Cases

Case #1. A 12-year-old white female with acute appendicitis was anesthetized with cyclopropane without an endotracheal tube. Five hours had elapsed between the last food intake and the onset of symptoms. Surgery was begun four hours later. Anesthesia was lightened during traction on the cecum, and the patient vomited and aspirated a massive amount of mixed solid and liquid material.

The oropharynx was immediately cleared by suction, and succinyl choline, 50 mg., was given, followed by endotracheal intubation. Surgery was completed as rapidly as possible, and anesthesia was maintained with cyclopropane. Repeated intermittent lavage and suction of the tracheo-bronchial tree were carried out. Bronchoscopy under general anesthesia was performed at the end of surgery, and considerable particulate matter was aspirated through the bronchoscope. Examination of the chest at this time revealed coarse rhonchi over the right lung field and dullness to percussion over the right lower lung anteriorly. Tracheostomy was then performed and general anesthesia was discontinued. The patient awakened promptly but continued to vomit large quantities of undigested food. Portable chest film revealed atelectasis of the right middle lobe.

The patient was placed on antibiotic therapy, and frequent lavage and suction through the tracheostomy. The following morning she coughed up a large plug of mucous, and examination of the chest at this time revealed the lungs to be clear. The remainder of her postoperative period was uneventful, and she made a full recovery.

Case #2. A 26-year-old white female was scheduled for emergency Caesarian section. She had been in active labor for four hours with a transverse lie. Anesthesia was induced with thiopental, 75 mg., and 100% oxygen. Because of surgical stimulus the

patient vomited and aspirated a large amount of liquid vomitus. Surgery was continued without interruption, and a live infant was delivered in four minutes. Intubation was attempted but, due to difficulty in exposing the larynx, was not completed until after the child was delivered. Anesthesia was maintained with nitrous oxide, 70%, oxygen, 30%, and intravenous succinyl choline. Following intubation the tracheo-bronchial tree was repeatedly lavaged with sterile saline and suctioned. The patient awakened promptly in the recovery room, and auscultation of the chest at this time revealed the lungs to be clear.

The patient was started on an antibiotic therapy, and a chest film which was taken showed normal lung fields. The patient remained afebrile but developed a loose cough productive of purulent sputum which continued for three days. Her postoperative course was otherwise uneventful. Her chest film remained clear, and she was discharged without further complication.

Case #3. A 26-year-old white male was admitted with a diagnosis of acute appendicitis. Anesthesia was induced with Thiopental, 500 mg., and maintained on nitrous oxide, oxygen, and halothane without intubation using a total of 12 mg. of D-tubocurarine for relaxation. After 45 minutes of anesthesia the patient became light, vomited, and aspirated. He immediately became dyspneic and cyanosis occurred within several minutes. He was given Thiopental, 500 mg., and oxygen with artificial ventilation. Surgery was completed within 15 minutes, and the patient was kept in the operating room for another 45 minutes receiving oxygen and artificial respiration. In the recovery room he responded poorly and remained quite lethargic. Examination of the chest at this time revealed rhonchi and rales in the right base. Six hours later he was started on endotracheal suction, penicillin, streptomycin and chloramphenicol. Aminophyllin suppositories were given for dyspnea. Nine hours after surgery a tracheostomy was performed, and intermittent

saline irrigation with suction was started. His temperature ranged from 101° to 102° orally for five days and he became afebrile on the seventh day. His chest films showed consolidation of the apical segment of the right lower lobe on the first postoperative day, and it gradually cleared in nine days. He was discharged on the tenth postoperative day without further complication.

The first two cases illustrate the importance of immediate diagnosis and treatment. In neither of these two cases was steroid therapy employed. It is difficult to say whether its use would have produced a smoother recovery. The rapid and repeated tracheo-bronchial lavage was of paramount importance in aiding recovery. The third case demonstrates how severe aspiration pneumonia can be when its recognition and treatment is delayed.

Summary

Regurgitation of gastric contents occurs in as many as one fourth of all general anesthetics. Aspiration can cause acute asphyxia and rapid death in as high as 11% of all mortalities associated with anesthesia. The unsuspected full stomach in patients undergoing emergency surgery or delivery is the most common predisposing factor to this syndrome. The use of local or regional anesthesia is the ideal prevention. Where this is not feasible, the use of an endotracheal tube is necessary to prevent aspiration. When aspiration occurs treatment must be immediate and should consist of copious tracheal lavage, adequate ventilation, and prevention of the inflammatory response by steroid therapy. Antibiotics should be reserved for the treatment rather than the prophylaxis of secondary bacterial infection.

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Odd Food Cravings

A hunger for strange items, such as starch, may indicate a nutritional deficiency or a gland disorder, according to Dr. Robert E. Stone of Chicago. Uncontrollable appetite is poorly understood, he said in the question and answer section of the January 26th *Journal of the American Medical Association*.

However, on the basis of experience, most patients with odd food cravings have been women suffering anemia due to loss of blood and small children with malnutrition and iron deficiency anemia. Three patients, all with the same type of anemia had different cravings. One hungered for starch, another for clay and a child for dirt.

A woman with a thyroid condition and anemia craved paper and rotten wood, while a man with adrenal cortex failure hungered for raw carrots. All of these patients lost their odd appetites when properly treated.

"Animals are known to select, when available, specific substances, such as salt or calcium, in which they are deficient, but man does not seem to be able to make appropriate selections when in need. What he obtains might depend largely on his past experiences and what, by chance, is immediately available to him, whether it is clay, starch, or paper."

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Anti-Inflammatory Agents in the Treatment of Connective Tissue Diseases

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Rheumatoid arthritis, rheumatoid spondylitis, and systemic lupus erythematosus may be treated with a variety of anti-inflammatory agents. Salicylates are most useful and least likely to cause unfavorable reactions. Steroids should be reserved for special cases or used as a last resort.

THE MOST COMMON connective tissue diseases are those generally classified as the rheumatoid disorders. The first objective in the management of these conditions is to provide relief of pain and second, to restore normal function. It is customary to initiate treatment conservatively, usually with a salicylate, and, if this proves inadequate, to select a more potent drug which may be either phenylbutazone, chloroquine or one of the gold salts. The use of steroids should be considered only in special cases or as a last resort. Our experience with the use of a number of anti-inflammatory agents in the treatment of rheumatoid arthritis, rheumatoid spondylitis and systemic lupus erythematosus has shown that some of these drugs appear to have certain advantages in each specific disease entity.

Presented before the Blue Ridge Chapter of the Virginia Academy of General Practice, Roanoke, Va., July 22, 1961.

Rheumatoid Arthritis

The first drug of choice in the management of rheumatoid arthritis is acetylsalicylic acid (aspirin) in regular divided doses. It may be given up to the point of tolerance, with subsequent dose reduction as the inflammatory symptoms subside. The exact mechanism of action of salicylates is unknown but they possess analgesic as well as anti-inflammatory properties. This has been shown by injecting silver nitrate into the joints of rats. The resulting edema subsided rapidly after aspirin treatment.¹ However, large doses have been known to induce gastro-intestinal side effects, tinnitus, hypoprothrombinemia and individual hypersensitivity. Unfortunately, many cases of rheumatoid arthritis cannot be handled with salicylates alone. Patients often complain of pain during such therapy and it has been found that pain recurrence is usually caused by a decline in salicylate blood levels between doses.²

When pain is not adequately relieved by salicylates, the next drug of choice is phenylbutazone or chloroquine. Chloroquine is felt by many to be of little value in the management of rheumatoid arthritis but seems to be more effective in systemic lupus erythematosus, particularly if skin lesions are a problem. Though chloroquine is believed to be one of the least toxic of the antimalarial drugs, prolonged dosage may result in numerous side effects which often require cessation of therapy.

Bagnall³ in Vancouver and Calkins and Cohen⁴ in Boston have been strong advocates for the use of chloroquine in the treatment of rheumatoid arthritis. The exact

mechanism of action of chloroquine is unknown, and it requires four to six weeks for any beneficial results to become evident. Side effects which necessitate withdrawal of the drug have been reported in 30 percent of some groups of patients.⁴ These reactions included skin lesions, gastro-intestinal symptoms, loss of hair, blanching in blondes and redheads, leukopenia, milkiess of the cornea, optic neuritis and mental disturbance.

In some cases phenylbutazone has proven effective in the treatment of rheumatoid arthritis^{5,6} and has shown particularly good results in rheumatoid spondylitis.⁷⁻⁹ Usually a week's trial with phenylbutazone at 300 to 400 mg. daily will serve to determine its usefulness in any particular case. Investigation has shown that this drug has analgesic, antipyretic and anti-inflammatory as well as antihistaminic properties.¹⁰ As with most drugs used in the treatment of rheumatoid disease, the possibility of toxic side effects must be dealt with. These include retention of sodium and chloride resulting in edema, gastro-intestinal reactions, maculopapular skin rash, and bone marrow depression. Phenylbutazone is contraindicated in patients with history of peptic ulcer and should be used with caution in cardiac cases. With proper selection of patients, periodic blood counts and low dosage, the risk of side effects is considerably reduced. In our experience, as well as that reported by other workers, improvement has been shown in many cases of rheumatoid arthritis and particularly in rheumatoid spondylitis treated with phenylbutazone.

With careful management chloroquine or phenylbutazone may be used along with salicylates as part of the basic program in rheumatoid arthritis to assist in symptomatic management. However, both drugs have certain limitations and side effects should be carefully watched for during drug administration.

Another group of drugs used in the management of rheumatoid arthritis are the gold salts. Although they were introduced over 30 years ago, their use is still controversial

and their method of action is not yet known. Assessment of results over a 25 year period in 7,600 patients treated with gold by various rheumatologists over the country showed that the majority of patients were considered to be benefited although relapse occurred in 25 percent.¹¹ Toxic manifestations were reported in 33 percent of all cases but only 5 percent were considered to be of a serious nature. These included dermatitis, oral lesions, gastro-intestinal toxicity, nephritis, and bone marrow depression. Toxic effects may be reduced by checking blood counts and urinalyses before each dose of gold is given. Later, if and when a remission occurs, the interval between doses can be increased for maintenance therapy. In our personal experience we have had favorable results with gold therapy. Minor skin rashes, transient leukopenia and albuminuria usually disappear when medication is withdrawn.

Corticosteroids are the most potent anti-inflammatory agents known and must be used with the greatest caution. There is general agreement that these drugs should be used only after other measures have failed, and only in those patients whose arthritis is so severe as to threaten disability or loss of employment. Steroid therapy may be also considered in patients who exhibit a pan-mesenchymal systemic reaction with high fever, severe anemia, or inflammatory changes in the pleurae, pericardium or ocular structures. A good general rule for maintenance therapy is to prescribe the least possible amount of steroid to give the patient some relief without creating a completely asymptomatic individual. Once the patient is committed to steroid therapy it becomes increasingly difficult to withdraw the drug, and it is usually at this time that serious complications occur. Corticosteroids have a definite place in the management of certain selected cases of rheumatoid arthritis. Although long term steroid therapy suppresses the inflammatory phase and alleviates symptoms, it does not retard the progress of the disease.

Prolonged steroid administration creates

additional problems which are more difficult to cope with than the usual side effects. Patients often develop peripheral neuritis or neuropathy which is manifested by foot or wrist drop, numbness and tingling of the extremities, or development of trophic ulcers of the finger tips or legs. These occur more frequently as the steroid dosage is being tapered off or withdrawn. The clinical as well as the pathological picture frequently resembles periarthritis nodosa.

Another problem in long term steroid treatment is the constant threat of adrenal failure when patients are exposed to stress. In order to avoid this, one should not hesitate to give 300 mg. of cortisone intramuscularly 24 to 36 hours prior to any scheduled operation, or intravenous hydrocortisone in the event of an emergency. These measures may be life saving and should be continued until the patient has become stabilized.

A very valuable adjunct in the treatment of rheumatoid arthritis is the use of intra-articular hydrocortisone. When injected directly into joints under aseptic precautions, symptomatic relief will last from two to six weeks in some patients. Very little difficulty has been encountered with the problem of infection or individual hypersensitivity.

Rheumatoid Spondylitis

We have recently completed an eight year follow-up study of 50 patients with rheumatoid spondylitis who have been treated with phenylbutazone. This drug has been used in the United States for the past ten years in a wide variety of rheumatic and inflammatory conditions, but few reports of extensive follow-up study of long term treatment in rheumatoid spondylitis have appeared in the literature.

During 1952-53 fifty cases of rheumatoid spondylitis were treated with phenylbutazone for periods varying from two to 12 months.⁹ Patients were selected from the Veterans Administration Hospital and the

wards and out-patient department of the Medical College of Virginia. All patients had clinical and x-ray evidence of rheumatoid spondylitis in varying stages of the disease. Thirty-three of the 50 patients had had previous x-ray therapy to the spine or sacroiliac joints on one or more occasions and seven had received some derivative of cortisone. During the first year of observation dosage of phenylbutazone ranged from 100 to 300 mg. daily and some patients used the drug intermittently after six months on regular dosage. At the end of the first year 54 percent of the patients showed major improvement as evidenced by relief of pain and improved range of motion while 16 percent showed minor improvement. Fifteen patients (30 percent) were considered failures, either because of no response to treatment or because of side reactions to the drug.

During 1960-61 an eight year follow-up study on 48 of the original group of 50 patients was performed either by personal examination, by review of current hospital and out-patient records, or by mail questionnaire.¹² The majority of the patients were World War II veterans and were contacted by mail questionnaire. A group of private and clinic out-patients comprised 20 percent of the total. It should be noted that a study of this type is somewhat difficult since some of the patients have been quite mobile with various addresses over the past eight years.

An analysis of the results of treatment with phenylbutazone in 48 of these patients was as follows:

- I. Major or minor improvement—21 patients.
 1. Six patients were still taking phenylbutazone in doses of 100 to 200 mg. daily at the end of eight years. Two of these patients were also using steroids because of peripheral joint symptoms.

2. Eight patients felt that the drug was no longer needed and had discontinued it for this reason. These patients were gainfully employed.
3. Seven patients used the drug intermittently for acute exacerbation of pain associated with the disease.

II. Failure or unsatisfactory results—17 patients.

1. Nine patients were classified as treatment failures because of lack of response to the drug. Three of these patients were taking steroids in an unknown dosage.
2. Five patients were classified as failures because of the development of some undesirable side effect necessitating withdrawal of the drug.
3. Three patients were classified as failures because of lack of response in addition to side effects necessitating withdrawal.

III. Unsatisfactory result due to extenuating circumstances—4 patients. These circumstances included such factors as inadequate facilities to check blood counts, expensiveness of the drug, fear of the drug, or "my doctor does not believe in it".

IV. Deaths during eight year interval, unrelated to administration of phenylbutazone—six patients.

1. Regional ileitis with fistulas and peritonitis (autopsy).
2. Uremic pericarditis due to polycystic kidney disease (autopsy).
3. Bronchopneumonia and far advanced pulmonary tuberculosis.
4. Paraplegia with multiple renal calculi and transfusion hemosiderosis (autopsy).
5. Suppurative bronchopneumonia and decubitis (autopsy).
6. Pyelonephritis with renal calculi and paraplegia.

It is believed that one of the two patients who could not be followed up died because of a concomitant aortic insufficiency associated with rheumatoid spondylitis noted in 1953.

Toxic side effects in the eight patients requiring withdrawal of the drug included three cases with gastro-intestinal distress, three with hematuria, one with skin rash, and one with an ulcerative stomatitis. In other patients minor side effects which appeared after the first year included epigastric burning in two patients, transient skin rash in one, and gingival ulcer in another. These reactions were treated symptomatically and the drug was continued.

Until recently x-ray therapy was thought to be the method of choice in the treatment of rheumatoid spondylitis. It now appears that phenylbutazone has largely replaced x-ray therapy for the treatment of this disorder.⁷⁻⁹ If dosage is handled judiciously and blood counts are taken at regular intervals, phenylbutazone may be used with very little hazard to the patient. The earlier reports of death and blood dyscrasias resulting from phenylbutazone therapy were thought to be related to the large doses administered. In the event of lack of response to the drug, x-ray therapy may sometimes be used to advantage.

Systemic Lupus Erythematosus

The most widely used drugs in the treatment of systemic lupus erythematosus are salicylates, antimalarials, and the steroids. Antimalarials have been most helpful in cases of discoid lupus where skin lesions were present. In chronic or sub-acute cases a dose of 250 to 500 mg. daily usually suffices to hold the disease in a state of remission. However, in acute fulminating exacerbations with fever, pleuritis, pericarditis, nephritis, or exfoliative dermatitis, steroids may be life saving. Sometimes 80 to 100 mg. of prednisone have to be administered daily, particularly if severe glomerulonephritis or a nephrotic syndrome is present. Pollak and co-

workers¹³ have reported that nine of 16 patients with histologic evidence of grave kidney disease have been kept alive after three years on large doses of prednisone, while ten patients with renal lupus had died within one year on small doses. If renal lupus is not present, steroids may often be withdrawn after an acute exacerbation, and the patient may be maintained satisfactorily with salicylates or antimalarials.

Summary

1. Salicylates are the drug of choice in basic management of most cases of rheumatoid arthritis. In certain cases, however, phenylbutazone, chloroquine or gold salts may be added to the basic regime. Steroids have a place in selected cases but should be resorted to only if all other measures have failed. Intra-articular administration of steroids has little influence on the course of the disease but may ameliorate acute exacerbations in one or two large joints.

2. Phenylbutazone is a valuable drug in the treatment of ankylosing spondylitis. When used judiciously, with proper dosage and precautions, it may effectively replace the conventional x-ray therapy for the treatment of this disease.

3. Antimalarials are quite effective in long term management of systemic lupus erythematosus particularly in controlling the skin lesions. Steroids have a definite place in acute exacerbations of this disease and high dosage is believed beneficial in lupus with severe renal involvement.

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Flagyl in the Treatment of Vaginal Trichomoniasis

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Cure of vaginal trichomoniasis is reported. Among thirty patients who returned for recheck, there were thirty cures.

THE READER need not fear a historical review of vaginal trichomoniasis nor a taxonomic analysis of the protozoan responsible for it, *trichomonas vaginalis*.

Until now, this "sixth venereal disease" has been attacked with many remedies but no cures. Local intravaginal medications have been moderately effective. These include low surface tension liquids, powders for insufflation, creams, jellies, and dry or gelatinous suppositories. None is capable of bearding the lion in his den, the deep recesses of cervical, vaginal and urethral glands.

Till now, oral trichomonacides have been ineffective. Yet a bloodborne trichomonacide would seem the only feasible approach. And so it has transpired.

The axiom states "In the field of medicine, always remember never to use the words 'always' and 'never'."

Yet the author's experience with Flagyl is that it *never* has failed, it *always* has succeeded in curing *trichomonas vaginalis* vaginitis. Other authors' results have approached this absolute.^{1,2,3,4}

Material

Thirty-five women with proven *trichomonas vaginalis* vaginitis were treated with Flagyl.

In each case the diagnosis was made by

the author on microscope examination of fresh saline suspensions of vaginal secretions at 430 magnifications.

In each case, similar follow-up microscope examinations of the leukorrhea were made by the author.

In five cases the patients failed to return for reexamination.

In the remaining 30 cases who returned for follow-up, five received two follow-up examinations.

In each case, pre- and post-treatment urinalysis and hemoglobin determinations were made by trained laboratory technicians.

No case of pregnancy complicated by trichomoniasis was treated with Flagyl, except as noted in the table.

Concomitant treatment of the sexual consort was not performed.

Each patient was given a bottle of thirty 250 mg. tablets of Flagyl* (metronidazole) and instructed to take one tablet with each meal for ten consecutive days, and to return in two weeks for reexamination. Previous and concomitant therapeutic methods and agents are as noted in the table. No other specific trichomonacide was prescribed to be used with the Flagyl.

Results

No bone marrow depression, evidenced by relative anemia, was detected by hemoglobin determination following Flagyl therapy.

No renal effects, as detectable on routine chemical and microscopic examination of urine, were observed. Indeed, in one case, (M. Goodwin), pyuria cleared in one week

*Supplied by Dr. J. Wm. Crosson, G. D. Searle and Co., Chicago.

TABLE

DATE	PATIENT	PREVIOUS TREATMENT	ADDITIONAL RX	FOLLOW-UP
3-28-62	P. K.	Vagisee, Tricofuron, Floraquin, Milibis, Tramagill	Mycostatin Suppos.	4-18. No trich.
4-7	M. J.	Tricofuron	Condoms, Vinegar douche	6-6. No trich.
4-11	L. Jones	"Suppositories"	One Tricofuron Suppository	4-27. No trich.
4-14	M. M.	Floraquin, Tricofuron	Tricofuron insufflated	4-25. No trich.
4-30	L. McN.	"Tetrex", Vinegar douche	None	4-28. No trich.
5-2	E. C.	"Vaginal jelly"	None	5-14. Yeast, WBC and bacteria. No trichomonas
5-2	M. Greene	Tritheon (oral), Milibis, Mycostatin, Tricofuron, Trimagill	Condoms	None
5-16	J. W.	Massengill douche	None	5-16. No trich. Flagyl caused slight laxation and vertigo
5-16	T. B.	Massengill douche	Cervix painted with AgNO ³	5-30. WBC. No trich.
5-21	D. H.	AVC	Cervix painted with AgNO ³ and cauterized	6-2. Bacteria and WBC. No trich.
5-22	R. B.	Furacin intravaginally	Cautery. AVC inserted. Cx painted with AgNO ³	6-4. WBC, bacteria. No trich.
5-25	V. C.	No	Cervix swabbed with AgNO ³ . Trimagill insufflated	None
5-26	V. T.	Massengill douche	Massengill douche	6-15. WBC, debris. No trich.
5-30	L. M.	Massengill douche	Massengill douche (AVC after 6-30)	6-9. WBC, bacteria, debris. No trich.
5-30	L. Jett	None	None	6-30. WBC, bacteria, debris. No trich.
6-6	V. R.	None	None	9-7. No trich.
6-13	L. G.	Milibis, Vagisee, Sterisil, Tricofuron, Floraquin	None	6-13. No trich.
6-16	P. McI.	Tricofuron, Betadine, Gentain violet	Cervix swabbed with AgNO ³ . Sultrin inserted	6-25. No trich.
6-22	N. S.	Tricofuron, Milibis	Furacin	6-29. WBC, bacteria. No trich.
6-22	C. G.	Milibis, Tricofuron	None	7-2. WBC. No trichomonas
6-25	L. T.	Floraquin, Vagisee, Trimagill, Tricofuron	None	None
6-26	J. C.	AVC	Cauterization. AVC inserted	7-24. WBC, bacteria, debris. No trich.
7-7	V. H.	AVC. Furacin	None	9-14. WBC, bacteria, debris. No trich.
7-13	C. B.	Unknown	Cauterization, Condoms, Furacin suppositories	None
7-16	V. G.	Floraquin, Vagisee, Milibis, Tricofuron	None	7-10. No trich.
7-28	A. R.	None	None	8-11. No trich. Few WBC
8-1	M. R.	No (asymptomatic)	Cervix swabbed with AgNO ³	7-30. Rare WBC. No trich.
8-6	J. J.	Vagisee, Floraquin, Tricofuron	None	8-11. Bacteria. No trich.
8-7	A. C.	None	None	8-15. No trich.
8-15	R. H.	AVC, Tricofuron	None	8-14. No trich.
8-18	M. B.	Furacin, Sultrin	Cervix swabbed with AgNO ³	8-22. No trich.
8-22	D. F.	None	None	9-15. WBC. No trichomonas
8-24	E. S.	"Ointment and Suppositories"	Cauterization, Cervix swabbed with AgNO ³ . Aci-Jel inserted	8-29. No trich.
8-25	V. W.	Sultrin	None	9-4. No trich.
8-27	M. Goodwin	Furacin	None	9-8. No trich.
				9-7. WBC. No trichomonas
				9-7. Yeast. No trich.
				9-4. No trich.
				9-14. No trich.

Patient J.J., a divorcee, deceived us in relation to her menstrual history and was given Flagyl at about 8 weeks of pregnancy. This was learned after she was admitted to the hospital, septic, after passing the fetus at home. We believe she was criminally aborted though she would not admit same.

Patient M. Goodwin developed some neck stiffness and "drawing" of the muscles of the right forearm. She was also taking Cytran and Elavil at the same time. All medications were discontinued and the symptoms promptly resolved.

on Flagyl therapy without other antimicrobial treatment.

Among the thirty patients who returned for recheck, thirty were cured. Among the five who received an additional check-up, there was no recurrence. These five also received no other trichomonicide following the first revisit. The treatment, as determined on repeat wet smear examination, was therefore in this series 100% effective.

Patients who had had mycotic infestations still had their mycotic infestations. Patients with bacterial (*Hemophilus vaginalis*?) infestation retained their purulent leukorrheas. Trichomoniasis was entirely obliterated.

Comment

It is seldom in the field of medicine that one encounters such a high cure rate as experienced here. Seldom, even in such a small series, can one observe 100% efficacy. Seldom, in scanning the literature, can one find reports which so consistently testify to curative powers approaching the absolute.

Drugs of such extraordinary capabilities comprise an elite group. Flagyl has proven its place among the champions.

With such highly documented effectiveness and safety as previously reported, we can now echo Ward's sentiments—"I'm delighted every time I diagnose a case of trichomoniasis, because at least for these people I can guarantee a cure."⁴

Summary

Thirty-five women with vaginal trichomoniasis were treated with Flagyl, 250 mg orally t.i.d. for 10 days.

Thirty returned for at least one check-up. Five of these had two check-ups. All were cured. No other trichomonacides were used concomitantly. Side-effects were negligible.

ADDENDUM

Since submitting the original manuscript for publication, we received an additional supply of Flagyl. Thirty-eight additional patients were treated, similar to the above-described routine. Twenty-eight have returned for follow-up along with one from the original series who had not previously been seen following Flagyl therapy. All were likewise free of trichomonas infestation. One, however, was given three 30-tablet supplies without benefit until it was ascertained that she had not completed the prescribed routine of treatment. After she took the medication precisely as directed, she was found to be free of trichomonas vaginal infestation. One patient (V.G.) from the first group experienced a recurrence (or reinfestation) which again responded to the prescribed regimen of Flagyl therapy.

One patient had to stop taking Flagyl after only four tablets, owing to nausea, but was nevertheless free of trichomonas on follow-up wet smear examination. Additional side effects included the production of dry mouth, brown or white tongue coating, bitter taste in the mouth, and disturbance of the taste sense. These findings have not changed our conclusions.

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CLEMENT J. ROBBINS, III, M.D.

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A Recapitulation of the Latest Concepts of Rheumatic Fever

A Review of the 51 Cases Treated at the Alexandria Hospital Between 1952 and 1961

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Although rheumatic fever and rheumatic heart disease appear to be decreasing, the physician must continue to strive for early diagnosis and treatment.

IT IS MOST DIFFICULT to establish the diagnosis of rheumatic fever in tropical and subtropical climates because the joint symptoms are minimal. However, in temperate climates the diagnosis is more easily established because the acute symptoms are more fulminating and the diagnosis is more often suspected.

The incidence of valvular damage is just as prevalent in one climate as another.

It should be remembered that approximately 3% of all individuals infected with Group A Beta Hemolytic Streptococcus develop acute rheumatic fever. By using the "Jones Criteria" or modifications thereof one may feel more comfortable in establishing a diagnosis.

The following formula may be used for establishing the diagnosis of rheumatic fever:¹

Written while Dr. Neumann was a resident in medicine at the Alexandria Community Hospital, Alexandria.

Major Criteria

- I. Carditis
- II. Polyarthrits
- III. Chorea
- IV. Subcutaneous nodules
- V. Erythema marginatum

Minor Criteria

- I. Fever
- II. Arthralgia
- III. Prolonged P-R interval in the EKG
- IV. Increased ESR, WBC, or presence of C-reactive protein
- V. Preceding beta-hemolytic streptococcal infection
- VI. Previous rheumatic fever or inactive rheumatic heart disease

Two major criteria or one major and two minor criteria might be used to establish a definite diagnosis of rheumatic fever. In subclinical and atypical cases any formula relying heavily on physical findings, as the Modified Jones Criteria recommended above, may not be applicable. The following ancillary studies may then be helpful:^{2,3}

1. Serum mucoproteins
2. Antistreptolysin O titer
3. Carditis by EKG or x-ray
4. Isolation of beta-hemolytic streptococci from the throat

According to McCarty⁴ hypersensitivity to the streptococcus is responsible for the development of rheumatic fever. Adequate

treatment of each streptococcus infection (always ten days of penicillin) may prevent the disease and recurrent attacks of the disease can be prevented by adequate penicillin or sulfonamid prophylaxis.

Treatment of streptococcal infection:

Penicillin in *full dosage* for 10 days

Prophylaxis of streptococcal infections:

Oral penicillin *daily*—200,000 to 500,000 U

or

Oral sulfadiazine *daily*—1 gm⁵

Certain aspects of the treatment of rheumatic fever are controversial. However, all agree that bedrest and proper nutrition are essential.

It is generally accepted that digitalization is necessary in rheumatic fever if atrial fibrillation or congestive failure are present. It is agreed that oxygen is necessary in rheumatic involvement of the lungs.

Not all agree that penicillin is beneficial after the rheumatic process becomes manifest, but there is general agreement that penicillin will do no harm unless hypersensitivity to it exists.

Penicillin is indicated when streptococcosis persists during active rheumatic fever and many believe that this condition exists in the majority of cases of rheumatic carditis.

All agree that the sterile inflammatory process should be suppressed, but a difference of opinion exists as to whether cortisone is necessary to achieve this end.^{6,7,8}

*Adequate treatment of the acute attack of rheumatic fever consists of suppression of all inflammation, analgesics and bedrest.*⁹

I. Suppression of all inflammation

- a. Sufficient anti-inflammatory agents must be used to reverse the process which is a sterile inflammatory reaction. Four mgm of cortisone or 1 mgm of prednisone per pound per day until the elevated sedimentation rate begins to fall (usually by the third day) then reduced to main-

tain continued lowering of the sedimentation rate.

- b. Salicylates must be used at a high level, but toxicity avoided. A blood level of 35 mgm% of sodium salicylate or 25 mgm% of ASA is usually necessary and may be obtained by giving aspirin or salicylate at the dosage of 1 gr. per pound per day. At home, where special laboratory procedures may not be available, the dosage should be gradually increased 1 gm every hour until tinnitus occurs.

II. Analgesics

Analgesics, (morphine if necessary), are given to combat anxiety and restlessness. (Acute pancarditis causes a feeling of imminent death and must be relieved.)

III. Rest

Bedrest is imperative with bedside nursing.

IV. Patient's Cooperation

Avoid frequent laboratory and diagnostic studies until the critical stage has passed. Reassure the patient that proper treatment in the acute phase will allow the body to be strong and healthy.

Rheumatic "pneumonitis" is not a bacterial infection but a purpura of the lung.

Use oxygen by tent, providing 50% oxygen concentration. *Absolutely avoid sulfonamides* and although penicillin is probably not harmful it is most likely of no benefit.

Rheumatic pleuritis, pericarditis or inflammation of the diaphragm may simulate an acute abdomen. Intra-abdominal rheumatic inflammation may also occur and involve the peritoneum, omentum or viscera.

The diagnosis may be established by giving a single large dose of salicylates and watching for response within twenty-four

hours. If relief is obtained salicylates and corticosteroids are indicated.

Rheumatic fever prophylaxis is easily obtained by:

- 1. A single daily dose of 1 gm of sulfadiazine or 2. 200,000-500,000 units of oral procaine penicillin daily

There are some important *contraindications* in the management of rheumatic fever.

- 1. Sulfonamides should not be used when rheumatic activity is present.
- 2. Antibiotics should not be used with pulmonary consolidation associated with pancarditis, but oxygen and corticosteroids should be used for treatment.
- 3. Quinidine is contraindicated for atrial fibrillation associated with carditis but digitalis should be used.
- 4. Penicillin or acetyl-salicylic acid should not be used with a history of hypersensitivity to these drugs.
- 5. Corticosteroids must not be used, or only with extreme caution, during concurrent infections, the adult patient should preferably be pre-tested and the child must be pre-tested with a P.P.D. intradermal test.
- 6. Physical activity should not be permitted as long as the sedimentation rate is elevated.

Summary

Rheumatic fever is a difficult disease to diagnose. If rheumatic fever is treated early the serious consequences of the inflammatory

process may be prevented. However, an incorrect diagnosis of rheumatic fever can subject a patient, usually a child, to unnecessary invalidism.

Recurrences of rheumatic fever can be prevented by adequate daily doses of penicillin or sulfadiazine.

The usual dosage is:

- 1. Oral procaine penicillin 200,000 to 500,000 units daily
- 2. Oral bicillin 200,000 to 400,000 units daily
- 3. Oral sulfadiazine 1 gm daily

NOTE: 1.2 million units of bicillin intramuscularly once monthly is the most effective method of prophylaxis but because of the duration and intensity of the pain at the site of injection it has been found extremely difficult to follow through with treatment for longer than 6 to 12 months either in private or clinic practice.¹⁰

Review of Charts

The following results were obtained by reviewing the charts of all cases of active rheumatic fever from 1952-1961 at the Alexandria Hospital. 51 cases were found, 26 male and 25 female. The age of the youngest patient was 2.5 years, the oldest patient 39 years with an average of 16.3 years. The patients stayed in the hospital between 1 and 58 days, with an average of 13.7 days.

The diagram below relates the incidence per year.

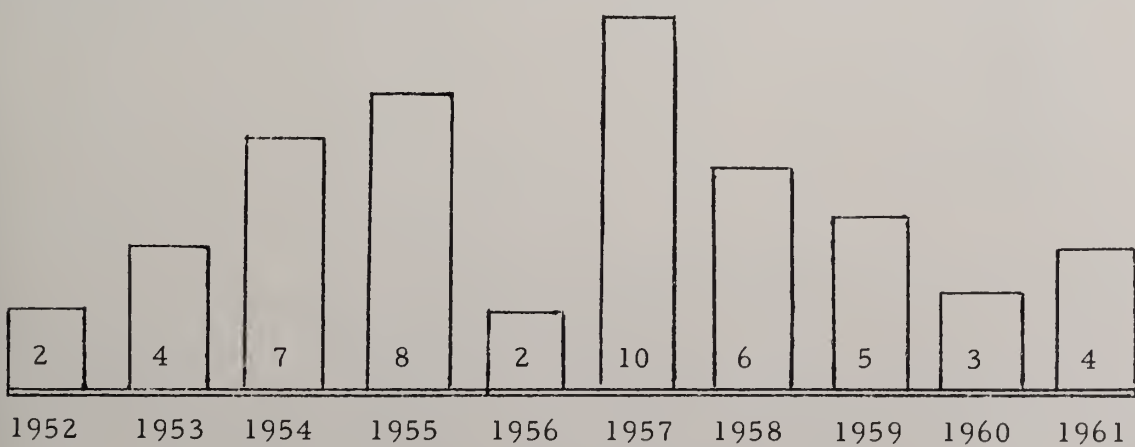


Fig. 1. Yearly incidence of rheumatic fever from 1952 through 1961 at the Alexandria Community Hospital.

The incidence of clinical findings according to the "Jones Criteria" was as follows:

MAJOR CRITERIA	Number of Cases	% Incidence
a. Carditis.....	14+	27.4
b. Polyarthrititis.....	29	57
c. Choreia.....	0	0
d. Subcutaneous Nodules.....	3	6
e. Erythema Marginatum.....	0	0
MINOR CRITERIA	Number of Cases	% Incidence
a. Fever.....	50 (Average 101.2° F.)	98
b. Arthralgia.....	38	74.5
c. Prolonged P-R.....	9	17.3
d. Elevated Sedimentation.....	(Over 10 mm Male)	
Rate (Corrected).....	44 (Over 20 mm Female)	89.4
e. Previous Streptococci Infection.....	30	66
f. Previous History of Rheumatic Fever....	15	30
OTHER CLINICAL FINDINGS	Lowest—Highest	
Hematocrit.....	26%.....48%	Average.....39.7%
Leucocyte count.....	4,150.....21,550	Average.....9,355

The aso-titer was done in 36 cases starting in 1954. It was positive (more than 100 Todd units) in 29 cases.

The C-reactive protein was done in 22 cases (starting in 1957) and was positive in 17 cases.

period in a community hospital at a time when changing concepts of the disease and

its treatment have appeared. It is felt that this incidence is low due to the difficulty of diagnosis and perhaps the hesitation on the part of the physician to establish the diagnosis at the time of its first appearance.

MURMURS WERE FOUND AS FOLLOWS

	Number of Cases
Systolic, Apical.....	17
Diastolic, Apical.....	1
Systolic and Diastolic, Apical.....	1
Rubs.....	4+1 ?
Gallop.....	1
Extrasystoles.....	1

CHEST X-RAY SHOWED POSITIVE FINDINGS IN 7 CASES:

Cardiac enlargement, left ventricular.....	2
Cardiac enlargement, generalized..	4
Pericardial effusion.....	1

THERAPY:

The following medications were administered in addition to bed-rest:

Antibiotics alone.....	5
Aspirin alone.....	7
Adrenal hormones alone.....	2
Antibiotics plus aspirin.....	16
Antibiotics plus adrenal hormones.....	4
Aspirin plus adrenal hormones..	6
Antibiotics plus aspirin plus adrenal hormones.....	9
No special therapy.....	5

One case in 1952 received adrenal hormones, the other cases received the steroids after 1955.

No attempt has been made to evaluate the findings of this review. The purpose of the study was primarily to present the incidence of the disease as diagnosed over a 10 year

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Fast Rising Disabler

Chronic lung disease is the fastest rising cause of total disability in the United States today, according to Dr. Richard W. Stone, New York City. Social Security data indicate that worker disability allowances for chronic lung disease are surpassed in number only by those for heart disease due to hardening of the arteries, he said in an article in the January *Archives of Environmental Health*, published by the American Medical Association.

In men, lung cancer and chronic respiratory disease, which includes bronchitis, pneumonia and emphysema, are rising at "an alarming rate." In 1950, the combined death rate of these diseases in men was 23.5 deaths per 100,000, whereas, in 1959, it had risen to 44 deaths per 100,000.

Up to the age of 40, men and women have about the same number of deaths and these are of low incidence. By age 50, three times the number of men die from chronic respiratory diseases as do women, and by age 60 the difference is of the order of 7 times greater for men. In men, there has been a 100-fold increase between ages 35 and 65, whereas, in women, the increase has been only 10-fold. It is not known whether these differences are due to intrinsic sex differences, or if they are environmental. The problem presents a rising threat upon which industry, voluntary health agencies, government, and academic bodies should plan an assault.

Dr. Stone is medical director of the New York Telephone Company.

Physiologic Effects of Duplicate Bridge

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Playing bridge seriously causes changes in blood pressure and heart rate that might be undesirable in some patients.

THE AUTHOR, a Bridge enthusiast who on many occasions had noted while playing a sudden increase in cardiac rate and flushing of the face, wondered what the

signed as not to slow the rapid flow of playing during the bridge contest and was carried out in a unit of the American Duplicate Bridge Association under actual playing conditions. Thirty subjects were studied. It was quickly noted that respiration was not particularly influenced by the contest. Blood pressure showed a considerable variation. In 16 of the 30 subjects studied diastolic pressure became significantly elevated in what is usually considered hypertensive range; that is, 100 or higher. It was also noted that the pulse rate increased in 11 of

CHART NO. I

	Lowest Blood Pressure	Highest Blood Pressure	Lowest Pulse	Highest Pulse
1	120/60	160/110	69	80
2	120/80	150/89	80	106
3	115/80	130/90	76	88
4	125/90	160/120	78	98
5	120/80	180/110	86	100
6	110/70	150/100	72	87
7	128/90	160/110	82	100
8	120/70	160/90	84	90
9	130/90	185/140	98	128
10	100/60	120/90	76	80
11	130/90	150/100	70	79
12	120/95	140/101	92	108
13	120/60	140/90	76	90
14	110/80	130/95	88	102
15	150/80	160/80	80	87
16	110/60	120/80	80	84
17	120/90	140/100	79	88
18	120/80	160/102	72	88
19	120/70	130/90	80	86
20	110/80	135/100	82	98
21	120/70	150/80	82	100
22	120/60	160/110	90	100
23	110/60	140/90	80	86
24	120/80	140/90	73	76
25	134/98	155/100	96	108
26	120/60	140/100	80	88
27	130/70	150/90	80	88
28	110/70	128/85	76	100
29	130/90	160/90	80	96
30	130/92	140/100	80	98

effect of this game was on himself, as well as others. A study was set up in which a technician, trained by the physician, sat beside each player and recorded the pulse, blood pressure, and respiration after every second hand. The project had to be so de-

the 30 players to what is considered abnormal range; that is, 100 or higher while sitting. It was noted that the primary factor increasing blood pressure and pulse occurred during the actual play of the hand. The

subject did not appear to be influenced very much by bidding or by defensive playing.

Cholesterol was taken on all players before

CHART NO. II—CHOLESTEROLS

	<i>Before Bridge (2½ to 3 Hours After Dinner)</i>	<i>After Bridge (5½ to 6 Hours After Dinner)</i>
	mgms. %	mgms. %
1.....	247	240
2.....	232	190
3.....	232	228
4.....	240	228
5.....	173	169
6.....	180	190
7.....	187	198
8.....	325	290
9.....	180	198
10.....	128	147
11.....	170	105
12.....	166	196
13.....	157	147
14.....	174	190
15.....	187	180
16.....	145	143
17.....	150	145
18.....	134	123
19.....	160	165
20.....	134	134
21.....	134	102
22.....	202	198
23.....	238	225
24.....	123	134
25.....	202	180
26.....	128	110
27.....	176	170
28.....	151	148
29.....	173	185
30.....	148	159

the beginning of the contest and again at the end of the play, which lasted approximately three and a half hours. The game usually began at 8 o'clock at night. The results of this study showed no consistent pattern and did not appear to become excessively elevated, in spite of the fact that the players consumed a fair amount of coffee and cream during the evening along with smoking considerably.

Electrocardiograms were taken on 10 of the subjects studied and no significant changes were noted. One patient, who had a recent myocardial infarction, was permitted to play approximately two months after his illness and no change in his electrocardiogram was noted.

Another feature of the study was the completion of a questionnaire in which more of the players participated, even though they did not participate in the actual study of blood pressure, pulse, and respiration. It came as some surprise to the author that although this project was greeted with great enthusiasm initially by everyone, as the study was carried out very few persons, other than his own patients, would participate. The questionnaire and results obtained are listed in Chart 3.

In summary, half the individuals studied, who played duplicate bridge, became hypertensive at some point during the evening and one third of the individuals' pulses became 100 or better during the course of the activity. A majority of the players had trouble sleeping the night they played the game. These facts point to a potential danger to individuals who are already hypertensive and suggest that further studies should be carried out over a longer period of time and in a larger bridge unit, in an effort to further evaluate the effects of this game. Although transient hypertension may be insignificant, it may be the forerunner of more serious disease.

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CHART NO. III

	Yes	No	No Answer
Do you have trouble sleeping the night you play duplicate bridge?..	20	13	0
Do you sleep better if you play well?.....	16	14	3
Do you have trouble sleeping if your partner plays poorly?.....	4	28	1
Do you think much about the game the following day?.....	14	18	1
Have you ever had trouble sleeping two to three nights after playing?.....	0	33	0
When you play poorly do you find that you are depressed for one or more days?.....	2	31	0

Letters to The Editor

Hypertrophic Pyloric Stenosis

I am obligated to reply to the letters of Dr. Cimmino and Dr. Painter which appeared in the January Virginia Medical Monthly regarding the controversy over the diagnosis of hypertrophic pyloric stenosis.

I do not minimize the importance of x-ray as an aid in the diagnosis of hypertrophic pyloric stenosis in doubtful cases. My brief is with Dr. Cimmino's apparent condemnation of the value of clinical history and examination. I am quite certain that the ability to diagnose this condition early and correctly, without x-ray, is not confined

to physicians in Boston, Norfolk, and other medical centers, and I am equally certain that diagnosis by "olive" feeling is much the rule rather than the exception.

As Dr. Cimmino suggests, we will gladly continue to use x-ray as we do our bifocals—to help us to see, but not to replace our eyes. But please don't ask us to keep our cotton picking, olive-feeling, Anglo-Saxon hands off our patients.

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Diabetes Among Hawaiians

Diabetes is more prevalent among Hawaiians than any other ethnic group on the island of Oahu, according to a report in the February 9th Journal of the American Medical Association.

A study conducted by Dr. Norman R. Sloan, Department of Health, State of Hawaii, Honolulu, revealed that the rate of diabetes among Hawaiians was two and one-half times that of the overall occurrence of the disease and six times the rate among Caucasians.

The findings appear to show the existence of ethnic differences in susceptibility to diabetes at least in this one limited area. However, the explanation of these differences requires further study.

Roughly one-fourth of the island's employed civilians, 38,103 persons, were screened for diabetes by means of a finger blood sample. Of this number, 819 were con-

firmed as diabetics by their physician.

Since the prevalence of diabetes increases rapidly with age, age-adjusted rates were calculated. The overall age-adjusted rate was 18.4 per 1,000 persons. The rate for Hawaiians was 48.8 per 1,000 persons compared with 7.3 for Caucasians.

The rate for part-Hawaiians was 26.6. A possible explanation for the lower rate among part-Hawaiians is that this group represents a mixture with Caucasians and Chinese, two groups with lower than average rates. The rate among Chinese was 14.6, among Filipinos, 21.8, and among Portuguese, 11.7.

More detailed study is needed to determine if the differences are basically due to inheritance. A further study in depth is planned, using the accumulated data, to evaluate genetic, physical, nutritional, and related factors.

MACK I. SHANHOLTZ, M.D.

State Health Commissioner of Virginia

Bat Rabies

Since 1953 considerable attention has been focused on investigation of rabies in the free-living and colonial insectivorous bats of North America. It has been established that some infected specimens harbor the virus as symptomless carriers and do not succumb to the disease.

Thirty-seven states have reported laboratory confirmed cases of bat rabies and five human rabies deaths in the United States have been attributed to exposure to bats. In 1959 the first case of bat rabies in Virginia was reported.

The disease was first confirmed in Virginia in 1962 by fluorescent antibody microscopy in a bat from Petersburg (8-18-62) and by mouse inoculation in one from Mathews County (9-8-62).

Three methods of rabies diagnosis are employed by the Virginia Department of Health Laboratories. These are chemical (fluorescent antibody microscopy), a biological (animal inoculation) and mechanical (direct examination of stained brain tissue) methods. The intracerebral inoculation of mice with macerated brain tissue remains the standard against which other tests are evaluated.

Once mice are inoculated with the suspected material their attitude is closely observed for at least 21 days. Most mice infected in this manner will sicken and die within 5 to 8 days. Demonstration of the characteristic Negri bodies in sections from the mouse's brain then establishes the diagnosis of rabies.

The fluorescent antibody test (F.A.) is rapidly gaining in popularity. An examination for rabies using this method may be

completed within 5 to 10 hours as compared to approximately 2 weeks for the mouse inoculation test.

The direct microscopic examination of bat brain tissue specimens is hampered by the minute quantities of material usually available and because central nervous system histopathology is not always present. At least 50% of the otherwise positive specimens from bats fail to exhibit demonstrable Negri bodies.

The laboratory examination of suspected bat specimens, while of academic interest, is of no particular importance so far as the requirements for the treatment of an exposed person are concerned. Because nearly half of the symptomless infected bats, and many of the sick infected bats, have rabies virus in their saliva but not in the brain; because conventional diagnostic methods are ordinarily restricted to brain tests and would therefor miss the positive saliva; and because of the high infection rate in bats: *Every bat bite must be considered the bite of a rabies-infected animal.*

Therefore, the State Department of Health recommends anti-rabies hyperimmune serum followed by a course of at least 14 doses of avian-embryo vaccine be given any person bitten by a bat. Since the hyperimmune serum is of horse origin adequate sensitivity pretesting should be done. The serum may be injected around and under the wound if the site permits such infiltration. Immediate and thorough washing of the wound with antiseptic soap and water and even flushing of the wound with serum is recommended. Anti-tetanus treatment should of course be given. Following completion of the 14 dose regimen

of avian-embryo vaccine (at least 1 dose per day) a booster dose of the same amount should be given one week later followed by a second booster the following week.

Bats should not be submitted to the State Laboratory for examination unless a known human exposure has occurred and the complete details concerning the exposure should accompany the specimen. Consultation concerning individual cases may be obtained through the Bureau of Epidemiology, State Department of Health, Richmond.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE
DISEASE CONTROL

	Feb. 1963	Feb. 1962	Jan.- Feb. 1962	Jan.- Feb. 1962
Brucellosis	0	1	0	1
Diphtheria	0	1	1	2
Hepatitis	97	176	262	333
Measles	652	1407	1003	2766
Meningococcal Infections..	14	8	24	15
Aseptic Meningitis	4	3	9	4
Poliomyelitis	0	0	0	1
Rabies (In Animals)	20	15	35	25
Streptococcal Infections	1191	901	2253	1616
Tularemia	22	0	5	2
Typhoid Fever	0	1	0	2

Blood Warmer Recommended

The incidence of heart arrest among patients receiving massive blood transfusions is "markedly reduced" when the blood is warmed to about body temperature, according to Drs. C. Paul Boyan and William S. Howland, New York City. The two physicians compared the incidence of heart arrest among two groups of patients undergoing the same type of operation (radical surgery for cancer) under similar conditions, one group being transfused with cold blood and the other with warmed blood.

Reporting in the January 5th Journal of the American Medical Association, they said there were 21 heart arrests among 36 patients in the "cold blood" group but only 1 heart arrest among 45 patients who received warmed blood. "Patients who rapidly received large amounts of warmed bank blood were warm, dry, and pink, with readily obtainable blood pressure and pulse, and regained consciousness shortly after the end of the operation. This is in sharp contrast to those who had received massive transfusion

of cold bank blood and presented the picture of shock."

The patients in this group were cold, shivering, and had mottled skin. In addition, their blood pressure and pulse were difficult to measure and some had prolonged recovery from anesthesia.

These results, "lead us to believe that the bank blood should be warmed to body temperature when given rapidly and in large amounts."

Massive transfusion of cold blood will significantly lower the body temperature, and there is sufficient evidence to indicate that this has unfavorable effects upon the heart and circulatory system as well as other bodily processes.

A mechanism was devised to warm the bank blood as it is being transfused. The blood warmer can be incorporated easily into the transfusion setup in the operating room during massive blood replacement.

The authors are affiliated with the department of anesthesiology, Memorial Sloan-Kettering Cancer Center.

Mental Health....

Virginia's Mental Health Program

The 1942 General Assembly created the Department of Mental Hygiene and Hospitals by putting the existing but relatively independent state mental hospitals under the supervision, management and control of a State Hospital Board. Likewise the office of the Commissioner of Mental Hygiene and Hospitals was created, the appointment to be made by the Governor and approved by the General Assembly. At the present time Central State Hospital, Eastern State Hospital, Southwestern State Hospital, Western State Hospital, DeJarnette State Sanatorium, Virginia Treatment Center, Lynchburg Training School and Hospital, Petersburg Training School, and 23 Mental Hygiene Clinics come under the jurisdiction of this administrative organization.

There are about 15,000 patients in our institutions, which serve the entire State. The Mental Hygiene Clinics have an ever increasing case load running into thousands of patients each year. To perform these services the Department has in excess of 4500 employees of all categories, both professional and non-professional, who are employed on the basis of a 40-hour week. The current biennium budget is in excess of 46 million dollars, with an additional 10.2 million dollars for capital outlay improvements.

Philosophically the basic objectives of the Department's program are the treatment, care and rehabilitation of the mentally ill and mentally retarded people in the State. In order to carry out these objectives we must provide a continuity of services. We must not only treat the mentally ill but must seek to prevent mental handicaps, to promote mental health and to control mental illness. This broad program requires full

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cooperation between private practice and tax-supported organizations, and all private or governmental agencies whose work touches or relates to mental health and illness.

We realize that our own responsibility is great, but we also know that a substantial portion must be shared. Some responsibility for the mentally ill must be decentralized from the State to local governments, thereby establishing community responsibility.

There is a growing realization by the general public and families of patients that mental illness is a treatable disease, often with complete recovery. This concept has been reenforced by the impressive results achieved by private practitioners, private hospitals, psychiatric units in community hospitals and by State tax supported hospitals.

The utilization of modern psychiatric treatment measures such as psychotherapy, group therapy, drug therapy, convulsive therapy, occupational therapy, physical therapy and rehabilitation techniques have added greatly to our success in relieving the suffering of the mentally ill. The co-ordinated team approach of psychiatric social workers, psychologists, psychiatric nurses and attendants under the supervision of psychiatrists is bringing about better understanding and acceptance of our mutual goals, namely the diagnosis of the illness and treatment of the patient. This team approach results not only in promoting the patient's return to family and community, but also frequently retains the patient within the community when it is utilized in the community mental health clinics.

The use of volunteers in the hospitals has demonstrated the support of the community, and has also improved understanding, acceptance and recognition of our problems.

HIRAM W. DAVIS, M.D., *Commissioner, Department Mental Hygiene and Hospitals.*

The volunteer does not replace any type of employee, but is an adjunctive service to aid and assist in the comfort and rehabilitation of the patients. Various organizations and individuals have made great strides in promoting the recovery and well being of the patients. Through their work the hospitals have come to be regarded as a community asset, which is a change in public attitude from former years and a most welcome and happy circumstance.

Training and research are integral parts of our program. They are giving evidence of success. The Training Programs for Resident Physicians, Affiliate Nurses, Inservice training for Attendants and others are providing the hospitals with excellent personnel. Noteworthy in this area has been the development of a cooperative program with the Medical College of Virginia and the Medical School of the University of Virginia in the training of Psychiatrists in our State Hospitals. Eastern State Hospital is approved for two years residency training in Psychiatry. Central State Hospital is approved for three years residency training in Psychiatry. This is a powerful stimulant to our people to perform a higher calibre of medical psychiatric care as well as a great source of recruitment.

The results of training are innumerable. We secure better qualified people with greater job satisfaction which results in improved productivity and increased efficiency. Training provides stable employees with improved morals, thereby bringing about a more healthy climate of operation. It is known to be true that wherever there is a training program the trainees tend to remain in that area. Leadership is most important in this phase of endeavor. The calibre of leadership stirs the enthusiasm and imagination of the individual to greater effort in providing service.

I would like to suggest here that training and research are also important to the State economy. They may be a hidden asset, but directly they do produce more jobs, attract more people and make for better citizens.

The mental hospital as the site for intensive training programs is important to the community not only in its primary role of service, but in a secondary role as a constant source of employment. After all, the training of personnel within the hospital is a practical common sense approach. It is well worth the effort that goes into the administration of these programs.

There are a number of psychiatric research projects under way by private investigators as well as by the medical schools and this Department. Two projects of note under our jurisdiction are (1) the Northern Virginia Mental Health Project, which is an attempt to provide a co-ordinated systematic program of community service to people returning to their home community from Western State Hospital; and (2) the Phenylketonuria Project at Lynchburg Training School and Hospital, a co-ordinated case study with related agencies under a grant from the National Institute of Mental Health. The purpose is to study pre-natal and post-natal influences of metabolic importance in the production of certain types of mental deficiency.

You have heard, or read, that if you have sufficient personnel you do not need to place great emphasis on buildings. However, an environment of pleasant surroundings does have a beneficial effect, particularly for those people who are in the hospital for any length of time. Therefore, Virginia has been quite conscious of the need to develop adequate housing and other facilities.

During the past six years the Capital Outlay Program, amounting to 36.3 million dollars in State tax monies, has provided many fine new buildings, as well as remodeled older buildings. This has been made possible by the combined forces of gubernatorial leadership, legislative understanding and popular support. It is proper and fitting that recognition be given to all parties concerned.

The 1962 General Assembly provided appropriations to continue our Capital Outlay Program. The current appropriation

includes planning money for a hospital in Northern Virginia. Considerable study of this need has been made by the State Hospital Board, and the Board stands ready to accept its responsibility for the operation of a new hospital when it becomes a reality. A firm of associated architects is presently on the job surveying the total needs of the geographical area in Northern Virginia in preparation for the preliminary plans and final working drawings to be presented to the 1964 General Assembly.

The earlier recognition of illness, the acceptance of treatment, and the quality of treatment are resulting in a greater percentage of recovery of the young and middle aged mentally ill. This note of optimism is encouraging to all of us. However, we are confronted with a more serious aspect of our current and future programs. Specifically, we are receiving into our hospitals an increasing number of aged people with mental illness. Recent statistical studies revealed that over 95% of the patients, 65 years of age and older, who are admitted to our hospitals, had emotional or mental illness of a sufficient degree to bring about their commitment. Frequently these patients show sufficient recovery to return to community life, but for some reason or other the community does not have a place for them. We believe that our present program for the aged if expanded and improved is the best immediate course of action for our Department until the placement of the aged has been given the advantage of more intensive study by all interested agencies and individuals. We have not sought out the admission of the aged, but we have accepted our responsibility in rendering humane care and treatment to the sick.

In our State Hospitals, geriatric mentally ill patients are placed in special hospital wards, separate buildings or specially designed units. These physical facilities in addition to the special space arrangement for geriatrics also have the benefit of hospital medical services, occupational activities, recreational opportunities, religious services

and visiting privileges both within the hospital and at home.

While on the subject of age it is appropriate that I move to the other end of the life span; namely, early childhood and adolescence.

We have developed an inservice treatment program for mentally ill children by the establishment of the Children's Unit at Eastern State Hospital and the Adolescent Unit at Central State Hospital. These services recently have been supplemented by the opening of the Virginia Treatment Center for Children in Richmond. This forty-bed hospital offers inservice, out-patient and day care treatment to mentally ill or emotionally disturbed children under 16 years of age. Admission is on a voluntary basis according to medical-psychiatric needs. With the ever increasing birth rate and expanding economy it will be necessary for Virginia to keep abreast of the demands of the citizens for services for children.

If I may digress a moment I would like to describe the development of this Children's Treatment Center. In August, 1953, the State Hospital Board approved plans for the development of a psychiatric hospital for emotionally disturbed children to be presented to the Legislature in 1954. Considerable support was engendered by a number of public spirited organizations which prompted the General Assembly of 1956 to authorize the establishment of the Virginia Treatment Center for Children. The General Assembly appropriated State funds to implement the intent of the act. Site location, building plans, construction and assemblage of personnel finally were consummated by the beginning of the operation in the spring of 1962.

In relationship to the treatment facilities for children, it is important to note that about two-thirds of the service rendered by the mental hygiene clinics are to people 18 years of age and under. These clinics constitute our community mental health program, which currently ranks 18th in the Nation. This is a source of great pride to

all of us, since the clinics constitute an important line of defense. Presently they are geographically available to 80% of our State population. By early treatment in these clinics many people may be prevented from entering our hospitals. Likewise these clinics play an important role in the aftercare of our released hospital patients, again emphasizing that a continuum of treatment services involves the essential elements of both pre- and post-hospital care. We are most fortunate in Virginia in being able to provide this balanced program within the jurisdiction of a single department.

Recently it has been demonstrated by a scientifically controlled study at Eastern State Hospital that the return rate can be cut in half by providing Aftercare Service, including drugs, for patients. Therefore, the State Hospital Board is promoting expansion of Aftercare Services not only through our Mental Hygiene Clinics, which now number 23, but through our hospital clinics, such as the four established by Eastern State Hospital, in Norfolk, Newport News, Williamsburg and Richmond. We are utilizing every means possible to answer the needs of our people.

Reliable experts indicate that Virginia's population is shifting from rural to urban, and is expected to increase during the next decade by about 15-20%. If this be true, both factors will increase the necessity for more community mental health services, since there is a predictable incidence of mental illness in a given population, and usually a higher mental illness rate in urbanized areas.

The Joint Commission on Mental Health and Illness recommends on a national basis that expenditures for mental health can be doubled in the next five years and tripled in the next ten. Virginia, because of her present favorable ranking, will probably not need to go so far so fast, but will certainly need an accelerated program if she is to keep abreast of her sister states and in step with the times. If past experience is any guide, our community mental health pro-

gram will at least double in size. This will mean that our present clinics will have to expand to include surrounding counties. New facilities and new clinics must be developed where none are now present.

I would be remiss if I did not emphasize the tremendous importance of stimulating the community hospitals to establish psychiatric units and services in all geographic areas where professional people are available or may be recruited to come. No community general hospital containing 100 beds or more should be regarded as rendering complete services unless it accepts mental patients for short term hospitalization. You will be interested to know that such units exist in community hospitals in Fairfax, Richmond, Roanoke, Norfolk, Winchester and Lynchburg with several others under construction.

The psychiatric unit in a general hospital is a relatively recent development, but such units in addition to private mental hospitals handled more first admissions last year than all of the Nation's State hospitals put together. These units also can provide a place for a committed person to be treated as a patient until his admission to a State Hospital in lieu of holding him in the local jail—a most important function.

One of the most pressing problems facing this Department is the need for revision of our commitment laws. With this in mind the General Assembly of 1962 established a fifteen-member commission to study our Statutes and report its findings and recommendations to the 1964 General Assembly. The commission is currently at work. It is hoped that the corrective changes in the laws will permit more voluntary admissions to our hospitals. Further, it is being recommended that the laws in reference to epileptics should be completely purged from our Statutes. There are a number of other changes which are being considered, particularly those aspects of our laws which involve personal legal rights and privileges. It is interesting that this is one of the many recommendations included in the final re-

port of the Joint Commission on Mental Illness and Health.

The mentally retarded children and adults who come under our jurisdiction are involved in many of the activities and programs which have been discussed. We emphasize the training and education techniques at our institutions. Many of our patients have graduated from our Training Schools to Woodrow Wilson Rehabilitation Center. From here they have moved on into self support in community life.

The 1962 General Assembly likewise recognized the need to study the general field of retardation. They requested a VALC study on the services provided for mentally retarded persons. This committee is also now at work, and will render its report to the 1964 General Assembly.

Our Department will continue to work closely with other State agencies such as Health, Education and Welfare. Over the past few years the heads of these Departments have been meeting monthly as an Inter-Departmental Agency. They have quietly accomplished a great deal in their cooperative efforts.

We feel obligated to guarantee the most return possible for tax dollars spent. Therefore, it is essential that there be little if any duplication of services, and that all Departments work together in serving our people.

We think that it is essential to work closely with the private practitioners, the medical societies, lay associations, as well as professional associations who support our program.

In looking toward the future I hope that we will be able to establish rehabilitation houses in conjunction with the State Division of Rehabilitation. These units can be of great value in providing an important stepping stone from the hospital back to community life. This will tie in with our Aftercare Program, which we hope to expand not only through rehabilitation, but also through the local Health and Welfare Departments.

Another facet is the continuing emphasis on open door policy in our hospitals. The hospital, by itself, can open its wards, but the community must open its heart to this concept if it is to be successful. We must not only tear down the fences but we must remove fears from the minds of the citizens.

There has been considerable discussion in national circles concerning the establishment of day and night hospitals at the community level. This will require considerable planning, since these institutions usually involve local support and funds. We will sponsor and initiate plans in this direction.

We already have developed receiving and intensive treatment units in each of our hospitals. These we plan to develop more completely and more efficiently so as to provide the best possible psychiatric service. Along with this, we have started to decentralize activities within our large hospitals into smaller nursing unit operations, which provide more individual attention to our patients.

In several of our hospitals we have formed preadmission committees, which have worked most effectively. It is hoped that we can extend the preadmission examination concept to a greater range of usefulness outside of the hospitals, i.e., perhaps to our clinics.

Our plans include the expansion of community mental health programs, both in scope and refinement. We realize that any successful operation must include the essential ingredients of money, personnel and a healthy political climate, characterized by positive attitudes of public confidence, acceptance and understanding. We know that we cannot do our job effectively alone, but that we must have the support of the citizens, the legislators, the Governor and the Congressmen. We have a big job ahead and the only way that we will be able to accomplish our goals is through the cooperation and active participation of our colleagues and of the legal, religious, professional and lay organizations in Virginia.

Diagnostic Laboratory Medicine . . .

ANTICOAGULANT THERAPY—PART II

Dicumarol and its Derivatives—Indirect Acting Anticoagulants

Dicumarol and its derivatives given orally are absorbed from the intestines, metabolized in the liver and excreted in the urine. The rate of metabolism of each preparation determines its length of action—which is basically a decrease of the rate of production of those coagulation factors which are formed by the liver cells.

Only large doses of Dicumarol decrease the platelet adhesiveness—an important facet of thrombus initiation. Such doses, however, are also known to increase capillary permeability—a definitely undesirable side effect.

Investigators vary in their opinions as to the value of mild or profound anticoagulation. We believe that this difference of opinion stems in a large measure from the inadequacy of the test used generally to evaluate the effect of Dicumarol—the Quick's one-stage prothrombin time. When one evaluates individual coagulation factors affected by Dicumarol, one sees as good effect obtained with mild anticoagulation (Quick's one-stage prothrombin 30-40%) as with profound anticoagulation (Quick's one-stage prothrombin 10-15%) complicated by bleeding. Even so, considering the tremendous number of patients treated with Dicumarol (in Sweden 6% of population), the number of patients bleeding as a complication of such therapy is quite low.

Coumadin (Sodium Warfarin) is the Dicumarol-type drug we prescribe most frequently. We recommend an initial dose of about 20 mgm. of Coumadin and rather than discontinue therapy for one day as is done by some, we, after checking the prothrombin time, usually administer a smaller

dose of about 5 mgm. on the second day. Dosages on following days are regulated by the Quick's one-stage prothrombin concentration in order to achieve the level of anticoagulation mentioned above.

A few problems associated with Dicumarol therapy are worthy of exploration. As far as sensitivity to the drug is concerned, rare cases of severe allergic reaction have been published. Individual response to the drug varies. We are not aware of any up-to-date review of conditions influencing the degree of response.

Increased sensitivity is observed in patients who, before initiation of this therapy, show a mild decrease of factors produced in the liver (VII, X, II) even when the Quick's prothrombin time is normal. Such a situation persists for many years after *liver damage* caused by bacteria, viruses, drugs or alcoholism. *Constipation* increases the sensitivity to the drug by increasing the period of its intestinal absorption. *Generalized infection, emotional stress, change in diet*, all may increase the patient's response to Dicumarol. *Long term antibiotic therapy* decreases the bacterial flora responsible for the Vitamin K produced in the intestines and in this way increases the response of patients to Dicumarol.

Increased resistance, on the other hand, may be associated with a *personal and/or familial thrombotic tendency*. In such cases the individual plasma coagulation factors listed above will show higher than normal levels when assayed. *Gastro-intestinal inflammation and diarrhea* decrease absorption of the drug from the G. I. tract and consequently its effectiveness.

The follow-up of effectiveness of Dicumarol therapy is usually accomplished with the aid of Quick's one-stage prothrombin test, which it must be remembered, has serious limitations. Its main drawback lies

in the fact that the prothrombin time does not reflect any changes in the first phase of coagulation while Dicumarol influences at least one important factor (IX) of that phase. This limitation has been recognized and at present a new reliable reagent ("Thrombofax") is being used to determine the activity of the first stage of coagulation in one simple test called the "Partial Thromboplastin Time". We will add this test in the near future to the Quick's test in our laboratories' effort to improve the care of patients treated with Coumadin. It has been found that patients properly "controlled" with the Quick's test may show an overactivity of this first phase of coagulation and form clots even with a prothrombin time in the "therapeutic range".

The so-called "rebound phenomenon" is observed by clinicians as a recurrence of thrombosis after discontinuation of anticoagulant therapy. Mention of this may be found in the literature. We believe that the recurrence of thrombosis is not a rebound due to excessive production of coagulation factors depressed temporarily by anticoagulants. It is more likely a result of far too early discontinuation of anticoagulation while the patient is still in the hypercoagulable state. It could be prevented if one continues with mild anticoagulation for a longer period of time rather than to discontinue such therapy abruptly. Unfortunately, the discontinuation of anticoagulation therapy is frequently ordered when the patient on a bed-rest regimen is released from the hospital to a situation of greater freedom of physical activity at home. At this time, the blood coagulation factors usually increase (as seen in assays of individual factors) and patients may need the same or slightly higher dose of anticoagulation than when on bed rest.

At times when we detect an excess of activity in the first and second phases of coagulation we use under close supervision both Heparin and Coumadin in proportionally smaller doses.

In certain disease states Heparin is preferable especially when its properties other than as an anticoagulant are also of benefit; for example, its anti-inflammatory effect in thrombophlebitis. Under such circumstances Coumadin is of little benefit.

We, and others, have observed that Coumadin and Heparin can be given safely before many operative procedures, discontinued during the operation and reinstated after the operation without any excessive bleeding. This can be done if evaluation of individual coagulation factors is performed and the levels of activity found to be satisfactory.

We believe that treatment with Vitamin K at the least sign of bleeding while on Coumadin is rarely necessary. It may, in fact, at times contribute to the recurrence of thrombosis. In most instances the excessive Coumadin effect will pass within a day or two and bleeding will stop. If bleeding does not cease, a small plasma transfusion (100-200 ml.) will supply the necessary coagulation factors immediately and will stop the bleeding.

In summary, in the treatment of patients for hypercoagulation, we recommend the use of Heparin when the activity of the first phase of coagulation is excessive, Coumadin, when the second phase is overactive and both of these drugs when hypercoagulation is reflected in both phases.

It is unfortunate that there are no simple tests at present available to evaluate fully each phase of coagulation, but such are being developed.

At present, the only safe way of evaluation is a cumbersome time-consuming but accurate assay of individual coagulation factors. We have found that such a complete evaluation performed at four week intervals is sufficient to direct the patient's long term anticoagulant therapy and avoid both bleeding and recurrent thrombosis.

H. G. KUPFER, M.D.

The Medical Society of Virginia . . .

Minutes of Council

A meeting of the Council of The Medical Society of Virginia was called to order by Dr. Fletcher J. Wright, Jr., President, at 1:00 P.M. on January 30, 1963, at Society Headquarters. Attending were: Dr. Richard E. Palmer, Dr. Russell Buxton, Dr. Harry J. Warthen, Dr. Mack I. Shanholtz, Dr. James M. Moss, Dr. K. K. Wallace, Dr. A. Tyree Finch, Dr. W. N. Thompson, Dr. Alexander McCausland, Dr. Dennis P. McCarty, Dr. James G. Willis, Dr. C. C. Hatfield and Dr. Michael A. Puzak. Also attending were: Dr. Snowden C. Hall, 2nd Vice-President; Dr. Thomas S. Edwards, 3rd Vice-President; Dr. W. Callier Salley, Vice-Speaker; Dr. Vincent W. Archer, Delegate to AMA; Dr. W. Linwood Ball, Delegate to AMA; Dr. Allen Barker, Delegate to AMA; Dr. Hiram Davis, Commissioner of Mental Hygiene and Hospitals; Mr. John B. Duval and Mr. William Miller, attorneys for the Society; and Mr. Richard M. Nelson, Field Representative of AMA.

Dr. Wright recognized three new members of Council, Dr. C. C. Hatfield, Dr. Michael A. Puzak and Dr. James M. Moss, and explained the series of events leading to the interim appointment of Dr. Hatfield.

Dr. Lawrence O. Snead, Jr., Richmond radiologist, then presented his thoughts on the Professional Services Index currently being used by the Virginia Medical Service Association (Richmond Blue Shield). Dr. Snead stated that the Index had been endorsed in principle by The Medical Society of Virginia and described as a relative value schedule. It was his feeling that the Index is not a relative value schedule but rather is the median of fees paid by Blue Shield Plans over the United States. Dr. Snead went on to say that the Society should, under no conditions, permit confusion of the Index with the very valuable concept of relative value schedules.

During the ensuing discussion, it was brought out that representatives of the Virginia Radiological Society had appeared before the Reference Committee considering this matter during the Annual Meeting in October. An objection was voiced to the manner in which the Index had been developed, and the thought expressed that laymen were in many instances setting fees. The feeling was also expressed that the Professional Services Index had been devel-

oped from existing fee schedules, when actually it should have been developed from a true relative value schedule.

It was suggested that Dr. Snead contact the American College of Radiology for the purpose of obtaining that organization's thoughts concerning the Professional Services Index. It was also suggested that Dr. Snead might wish to work closely with the Virginia Radiological Society, and possibly make that group's recommendations known to the Society's Committee of Blue Shield Directors.

In discussing the action of the House of Delegates in October, it was stated that the House did not approve the Professional Services Index per se but actually approved it only in principle. The hope was expressed that an acceptable fee schedule would evolve from the present Index.

Dr. Snead called attention to the fact that The Medical Society of Virginia had several times requested that fees for services in the field of anesthesiology, radiology and pathology be covered under Blue Shield contracts rather than Blue Cross. He asked if anything could be done to persuade the Blue Cross-Blue Shield Plans to accept the Society's recommendations.

Dr. Salley replied that the Blue Shield Board was doing everything that it possibly could to follow through on the Society's recommendations, and that every effort would continue to be made in that direction. Concern was expressed for the future of radiology, and it was generally agreed that the Society's recommendations should be carried out if the private practice of radiology is to continue.

Matters under consideration by the Judicial Committee were then covered by Dr. Salley. He expressed some concern over the difficulty experienced by the Society in the recent Council election, and expressed the thought that further clarification of the By-Laws might be in order. The question was raised as to whether the rules by which the order of business of the House of Delegates is established should be written into the By-Laws or left as they are at the present time. Dr. Salley stated there had been some criticism of the manner in which officers are nominated during the Annual Meeting. Some members apparently feel a Nominating Committee appointed during the first session of the Home has little time to give the nominations the consideration

they deserve. He brought out the fact that the Speaker and Vice-Speaker of the House are not listed as officers, and this raises a question as to how they should be nominated. Also mentioned was the waste of time which often results from use of the written ballot. Attention was also called to certain hidden dangers in that section of the By-Laws having to do with general meetings and the initiation of business. Council was advised that reference to "residence" in the By-Laws might will pose a future problem. It was learned that there are many interpretations of the word "residence", and this obviously results in some confusion.

Dr. Salley stated that his committee would welcome any suggestions members of Council might wish to make concerning the By-Laws.

There followed a discussion of possible ways and means of streamlining the meetings of Council. It was explained that some societies permit their Executive Committees to review meeting agendas and prepare recommendations for their governing bodies. It was the consensus, however, that, regardless of the time involved, the present procedure should be retained. The Executive Secretary was requested to submit any supporting material which might throw additional light on matters under consideration.

It was then moved that future meetings of Council be conducted as they have in the past, and that the Executive Secretary make every effort to streamline the agendas as much as possible. The motion was seconded and adopted.

Dr. Owen Gwathmey, Chairman of the Program Committee, was introduced and brought Council up to date on plans for the 1963 Annual Meeting. Dr. Gwathmey stated that poor attendance was of serious concern and asked whether a change in meeting time might result in a greater registration. He stated that many societies had found that meeting on a Friday, Saturday and Sunday was better than meeting during the first of the week. Many members apparently find it possible to stay for the entire session when a week-end is involved. He also stated that it seems quite important for the Society to be authorized Category I credit by the American Academy of General Practice. Approximately 55-60 percent of the Society's membership is made up of general practitioners, and Category I credit for continuing education is important to them. Council learned that some members believed well known guest speakers from foreign countries might serve to stimulate attendance. Also advanced was the thought that the various specialty groups might spon-

sor programs of their own during an afternoon set aside for this purpose.

In discussing the various thoughts and suggestions advanced by Dr. Gwathmey, Council found wide differences of opinion concerning the proposed shift to week-end meetings. *A motion to bring the matter before the House was seconded and adopted.*

With reference to obtaining Category I credit for the scientific program, it was learned that one full day of the program would have to be sponsored by the Virginia Academy of General Practice. The question was raised as to whether this could possibly be reduced to a half of a day. *It was then moved that the decision be left to Dr. Gwathmey and his Program Committee. The motion was seconded and adopted.*

Although there was some doubt as to whether the expense of bringing foreign speakers to the meeting could be justified, the matter was again left to the discretion of the committee.

Dr. Gwathmey heard a suggestion that his committee give consideration to promoting workshop type programs—programs in which individual physicians actually participate in certain procedures.

Next to be introduced were Mr. E. W. Griffith and Mr. O. M. Stevenson, Jr., of the Eli Lilly Company. Mr. Griffith acquainted Council with the thinking of Eli Lilly on exhibiting at Annual Meetings. He assured everyone that Lilly was definitely going to participate in some manner, but was giving the Society the alternative of accepting a cash grant of \$300 in lieu of an actual exhibit. Mr. Griffith pointed out that Lilly normally has 160 people attending conventions every day, and that many times it would be easier and more practical to make a grant. He stated that some medical societies were at first afraid a precedent might be established, but that now twenty-seven states are accepting grants. He pointed out once more that the decision would be left entirely to the Society and that the Lilly Company would be pleased to cooperate either way.

Council then heard Dr. Henry S. Liebert and Dr. Henry S. Liebert, Jr., propose that services provided by osteopaths be covered under Blue Shield. It was pointed out that, up until 1960, such services were paid for under an extra-contractual arrangement with the Richmond Plan. Dr. Liebert expressed the belief that osteopaths were then excluded in error and cited the fact that such services are covered under Blue Shield Federal contracts. He went on to say that the situation has caused some embarrassment to osteopaths when patients received letters from

Blue Shield denying coverage for such services. Dr. Liebert stated that the situation has led to much confusion on the part of the public and requested that Council reverse its previous decision and recommend that the Blue Shield contract be re-written to cover certain services provided by doctors of osteopathy.

Following discussion on the matter, it was moved and seconded that the previous stand of Council be reaffirmed. The motion carried.

Next to be considered was a date and location for the 1966 Annual Meeting. Council had earlier directed that facilities in Alexandria and Williamsburg be investigated. It was reported that an "on site" inspection in Williamsburg gave every reason to believe that the Society would enjoy a very fine Annual Meeting there. Although the only dates available were November 6 through 9, it was decided that this would not pose too much of a handicap.

An invitation from the Princess Anne County Medical Society to meet in Virginia Beach in 1966 was made known to Council, and it was received with appreciation.

It was then moved that the Society proceed with plans to meet in Williamsburg in 1966 if the dates do not conflict with any of the larger national meetings. The motion was seconded and adopted.

Council was advised that the State Chamber of Commerce has requested all members to contribute to the Chamber's Building Fund. The Chamber has recently purchased a new Headquarters Building in downtown Richmond and is seeking to pay off its mortgage. The amount of \$25 was asked from the Society. *A motion to contribute \$25 to the Chamber's Building Fund was adopted.*

There followed a discussion concerning the advisability of sponsoring another luncheon from Virginia's Congressional delegation this Spring. Everyone agreed that these luncheons have been very successful and should be continued by all means. *A motion to sponsor a luncheon in 1963 was adopted.*

Dr. Edwards reported on plans to hold a statewide conference on Virginia's State-Local Hospitalization Program, and requested Council to approve Society participation. If approval should be granted, the Society would act as co-sponsor with the Virginia Council on Health and Medical Care and the Virginia Hospital Association. Dr. Edwards considered the SLH Program one of the most advanced and unique programs of its kind in the country. Unfortunately, some localities have failed to participate fully and, consequently, the Program has not yet realized its

maximum potential. The conference would be designed not only with the public in mind, but also Welfare personnel, members of boards of supervisors, hospital administrators, etc.

A question was raised as to whether such a conference would serve to play down the importance of Kerr-Mills in Virginia. The thought was expressed that no harm to Kerr-Mills would result. It was believed that all Virginians should know about this very fine program.

A motion endorsing the proposed conference and approving Society participation was then adopted.

A question was raised concerning the need of funds in planning the conference, and *it was moved that the Executive Committee be permitted to use its discretion should such a need arise. The motion was seconded and adopted.*

Council was advised that Dr. Edwards had recently been elected Chairman of the Virginia Medical Political Action Committee (VAMPAC), and Dr. William Grossmann, Petersburg, named Vice-Chairman. The appointment of a Board of Directors was under way and Council was requested to make known its thoughts concerning membership. Council approval of the new Chairman and Vice-Chairman was likewise requested.

A motion was introduced and seconded calling for Council approval of actions taken thus far by VAMPAC. During the discussion, Mr. Duval commented that he could see no reason why the Society should not retain a close working relationship with VAMPAC as long as no financial support was involved.

Prompted by the feeling that Council should continue to exercise some degree of leadership, *it was moved that the motion be amended in such manner that the Executive Committee would approve future elections. The amendment was seconded and adopted, after which the principle motion, as amended, was adopted.*

With reference to a representative of the Woman's Auxiliary on the Board of Directors of VAMPAC, it was moved and adopted that Mrs. William F. Grigg, Jr., be appointed.

The immediate selection of four additional members of the Board was left to the Executive Committee, and a motion to that effect was adopted.

Dr. McCausland presented proposed amendments to the "Standards of Principles Governing Lawyers and Physicians" as prepared by the Liaison Committee to the Virginia State Bar. *Council then adopted a motion approving the amendments (Section C).*

The Section, as amended, reads as follows:

"Section C. Physician's Fee and Services.

1. It is fully understood that under no circumstances should the physician's charges, or his fees as a witness, be contingent upon the success of the patient's litigation. *Nevertheless, physicians would be justified in awaiting the outcome of litigation for payment of their medical bills and witness fees in cases where the attorney for the plaintiff-patient informs the physician that the client has limited funds available and is unable to pay pending litigation.*

2. *Clients in personal injury cases should be encouraged by their attorneys to pay their bills for medical care as soon as possible, without relationship to ultimate success or lack of pending litigation. Attorneys for the plaintiff-patient should see to it that all related medical expenses are paid from the proceeds of a recovery in the litigation."*

There followed a discussion concerning the review of malpractice cases, and there was some feeling that perhaps copies of the joint screening procedure, approved by both the Society and the Virginia State Bar, should be distributed again to all members. It was also suggested that "trial clinic" programs be considered for members.

Dr. Barker, Chairman of the Committee on Medical Education, reported on a recent meeting of his committee. He stated that the committee did not deem it feasible to make a recommendation at this time as to whether the Society should sponsor scholarships for medical students. Any definite recommendation should be withheld until the true financial condition of the Society can be determined at the end of the fiscal year. Dr. Barker went on to say that his committee was most impressed with the AMA guaranteed loan program and urged strong and continued support by The Medical Society of Virginia.

Council also learned that the Committee on Medical Education believed that much good would result from having the Deans of both medical schools address the House of Delegates each year. It was stated that both Deans were anxious to know of any complaints or areas of dissatisfaction in order that they might take steps to correct them as soon as possible.

Dr. Shanholtz reported recommendations of the Advisory Committee to the State Department of Health with respect to use of oral type vaccine for polio. He discussed the three meetings of the committee to date and its recommendations covering use of the vaccine. The committee's most recent recommendation is that the State Department of Health and local health departments use live oral polio vaccine only during an actual or threatened epidemic situation. The committee also urged that Salk vaccine be used to the maximum extent possible. *A motion approving the committee's recommendation was adopted.*

Dr. Ball advised Council that the Society's Delegates to AMA proposed to nominate Dr. Vincent Archer for membership on the AMA Board of Trustees. He requested that each member of Council write any friends representing other states in the AMA House of Delegates. It was suggested that Councilors be provided with names and addresses of members of the AMA House.

Council was advised that Dr. Charles M. Irvin, Roanoke, had recently tendered his resignation as a member of the Virginia Board of Medical Examiners and the names of three nominees, suggested by the Sixth District, had been forwarded to the Governor. The names had been approved first by the Executive Committee.

There being no further business, the meeting was adjourned.

ROBERT I. HOWARD, *Secretary*

Approved:

FLETCHER J. WRIGHT, JR., M.D.

President

The Keogh Law

THE SELF-EMPLOYED Individual Tax Retirement Act of 1962 (HR-10) generally referred to as the Keogh Law is a compromise between forces striving to eliminate tax discrimination against self-employed persons and forces who admit that there has been discrimination but feel that this is the wrong time to permit a cut in income tax revenue payable to the Federal government. It has been estimated that the Keogh legislation as originally proposed would have reduced Federal revenue 600 million dollars annually, whereas the act as passed is estimated to reduce this revenue approximately 160 million dollars. Because of the complex nature of the restrictions outlined in the Act, it is quite possible that many self-employed persons will be deterred from establishing a qualified plan and this figure will be reduced still more.

The staffs of our medical societies have been alert in providing us with information regarding this legislation. In the November 6, 1962 edition of "News and Views," Mr. Robert I. Howard gave us an excellent summary analysis of the Act. The Law Department of the American Medical Association has prepared a brochure entitled "The Keogh Law". It is available to members upon request. This includes many illustrative examples that should be helpful to physicians.

The Treasury Department must publish regulations governing the administration of this law. These have not been released at the time this is written but should be available early in 1963. We will undoubtedly receive further advice regarding these regulations both from the medical associations and from banks, insurance companies and the government, as they provide mechanisms for investing the pension funds.

The limitations imposed by this law and the requirements for qualifying a retirement plan make it necessary that a physician review his particular situation very carefully and it is a prerequisite that he secure competent legal advice before installing a personal retirement program involving tax deferral.

The Third National Congress on Voluntary Health Insurance

THESE CONGRESSES were authorized by the House of Delegates of the A.M.A. and held in Chicago on February 15 and 16, 1963. A real attempt has been made to have all interests and all states represented. The interests have included the practicing physician, hospitals, Blue Cross, Blue Shield, the insurance companies, group practice, the closed panel plans, labor, government, management, and independent economists.

These three programs have all been interesting and worthwhile, but

this one pointed up better than any other the agreement on goals, the differences of ideology and the problems we face.

The accepted goal is that of providing the public with the best possible medical care at a price it can afford. It would be naive to claim that there are no secondary goals. These might best be referred to in a discussion of the differences in ideology, but it should be kept in mind that each believes that the primary goal can best be accomplished if its "secondary goal" or principle is preserved.

The practicing physician is interested in preserving the principle of "free choice of physicians" and the privilege of determining what is best for his patient without dictation by an insuring mechanism or the government.

The Blue Cross and Shield are interested in performing the social function of distributing the cost of health care on a voluntary community-rated basis.

The insurance companies are interested in performing satisfactorily in the health care field in order that the voluntary free enterprise system can be preserved and that their other lines of insurance thereby remain a private enterprise function.

Labor is interested in fostering social and community pressures through collective bargaining that will result in more health care benefits for its members and in keeping health care costs at a level where these benefits will buy as much service as possible.

The closed panel plans are interested in seeking recognition of their system of practice as one in which both cost and quality of care can be controlled.

Management is interested in a medical care system that will foster an able-bodied and healthy working force and wishes its contribution thereto to be within the limits that will permit it to compete in the free enterprise market. Since many industrial companies use the insuring mechanism with both management and employees contributing, there is concern as to whether the premium cost will increase to a point that employee will not be willing or able to participate.

Although government representatives were guests at the Congress, no one was on the program to present the government viewpoint.

Some of the problems are recognized as common to all groups. Many arise because of the different ideologies.

The physician in individual practice places a different value on "freedom of choice" than does the physician in a closed panel plan.

In general the Blue Cross and Shield believe in first dollar, full coverage on a community-rated basis whereas the insurance companies maintain that the use of deductibles, co-insurance and experience rating is evidence of the flexibility and imaginativeness that permit them to make a substantial contribution in the field and to develop their major medical programs with high top limits and broad spectrum of benefits.

Labor definitely is in favor of the social security mechanism for providing some health care for the aged. Organized medicine and the insurance

companies are opposed. Blue Cross is studying ways and means whereby it could be the mechanism of administering tax funds for the care of the aged.

Medical society committees to review charges were thoroughly discussed in the workshops. As a rule, representatives of medical societies expressed a willingness to meet responsibilities in the field and representatives of Blue Shield and the insurance companies vouched for the effectiveness of review committees in many localities.

Utilization studies are much more difficult and expensive. Pilot studies have been made and more are planned. Tribute was paid to the work of Tissue Committees. In some localities utilization committees have attained permanent status. In general there was a feeling that use of hospital beds was a function of the adequacy of the number of hospital beds. Construction of new hospitals should be carefully planned, but it was questioned that the American public should be deprived of the luxury of an apparent excess number of beds, if it could and was willing to pay for them, in order to preserve the prepaying mechanisms.

In an eloquent finale, Dr. Annis presented his conception of the Position of Medicine.

He expressed the desire of medicine to provide adequate and high-quality medical care for the aged but pointed out the dangers and the deceptions of the Social Security approach. He accepted the necessity of government responsibility of those unable to pay, preferably administered by local government, accepted Kerr-Mills as the law of the land, and expressed Medicine's obligation to help make it work.

With regard to utilization and control of costs, he conceded that the physician had great influence and responsibility but that there were extraneous pressures and influences and that mutual understanding and willingness to cooperate by all parties concerned should be sought.

He expressed appreciation of the contributions of both the Service plans and the insurance companies in making the voluntary system work and described the efforts of the A.M.A. to cooperate with both groups. This Congress was one example of its activities.

E. S. WILLIAMS, M.D.

New Members.

The following new members were received into The Medical Society of Virginia during the month of February:

Jorge Anibal Allende, M.D.,
Clifton Forge
Theodore Roe Austin, M.D., Arlington
William Andrew Dickenson, M.D.,
Virginia Beach
Andrew Maurice Fekete, M.D., Norfolk
Nelson Moffett Fox, Jr., M.D.,
Martinsville
Meborah Hassan, M.D., Arlington
Slobodan Poleksic, M.D., Hampton
William Lacy Robbins, Jr., M.D.,
Martinsville
Oguz Temucin, M.D., Alexandria
Fuat Turkecul, M.D., Falls Church
Lawrence C. Zacharias, M.D., Richmond

Dr. Alexander McCausland,

Roanoke, has been cited as the doctor doing the most towards the employment of the physically handicapped in Virginia. The award is sponsored by the President's Committee for the Physically Handicapped and the Governor's Award Committee. Dr. McCausland received formal recognition of his work in the rehabilitation of arthritic and other physically handicapped persons in Southwest Virginia and his long service on the area's council for the handicapped.

Dr. Leroy D. Soper,

Danville, has accepted the position of coordinator of Medical Education at Louise Obici Hospital in Suffolk, effective June 1st. He became Danville's public health director in 1954 and was later named district director for Pittsylvania and Halifax counties as well. Since his retirement, he has continued to serve as consultant. One of Dr. Soper's first jobs will be to set up an out-patient department at the hospital

which is undergoing a two million dollar expansion. He will be in charge of interns, residents and the nurses training school.

Dr. Maloney Resigns.

Dr. William F. Maloney, dean of the School of Medicine, Medical College of Virginia, has resigned and is returning to his native midwest. He has accepted the position as associate director of the Association of American Medical Colleges in Evanston, Illinois, effective July 1st. Dr. Maloney has been dean at the Medical College since 1957.

Dr. William H. Muller, Jr.,

Chairman of the Department of Surgery at the University of Virginia, has been elected president-elect of the Society of University Surgeons. The society is composed of 450 surgeons with university affiliations in the United States and Canada. Dr. Muller will take office as president next February.

Dr. Carl W. LaFratta

Was appointed chief of the department of physical medicine and rehabilitation of the Veterans Administration Center at Kecoughtan, effective in February. This department services a 560 bed hospital and a 1200 bed domiciliary. Dr. LaFratta was formerly in the field of tuberculosis control with the Richmond City Health Department and entered the field of physical medicine and rehabilitation at McGuire VA Hospital in 1956. He makes his home in Newport News.

Virginia Academy of General Practice.

The annual meeting of the Academy will be held at the Hotel Jefferson, Richmond, May 9-12. The scientific program begins on the 10th and the first session will be sponsored by the Virginia Diabetes Association, as follows: Neurological Complications of

Diabetes Mellitus by Dr. Fred E. Dreifuss, University of Virginia; Mechanisms, Uses and Complications of Oral Hypoglycemic Agents by Dr. John A. Owen, University of Virginia; Insulin Resistance by Drs. Clay T. Gardner, Jr., and H. St. George Tucker, Jr., Medical College of Virginia; The Regulation of Glucose Metabolism by Dr. Stanton Segal, National Institutes of Health, Bethesda, Maryland; and Treatment of Diabetes in Pregnancy by Dr. Priscilla White, Joslin Clinic, Boston. The afternoon session will have as speakers Dr. Alan F. Guttmacher, clinical professor of obstetrics and gynecology, Columbia University, whose subject will be Modern Developments in the Field of Contraception; and Dr. Edwin C. Jungck, assistant clinical professor of Endocrinology of the University of Georgia, his subject being Functional Uterine Bleeding.

The program for the 11th is: The Acute Surgical Abdomen in the Newborn and Infant by Dr. Arnold M. Salzberg, Medical College of Virginia; Some Aspects of Antimicrobial Therapy in Infants and Children by Dr. Heinz F. Eichenwald, professor of pediatrics, Cornell University; Asthmatic Bronchitis—Bronchial Asthma? by Dr. Howard G. Rapaport, associate professor of clinical pediatrics for Allergy, Albert Einstein College of Medicine; Common Foot Deformities in Children by Dr. Alfred R. Shands, Alfred I. DuPont Institute of the Nemours Foundation; Which Patient with Hypertension Needs an Endocrine Evaluation by Dr. Kenneth R. Crispell, University of Virginia; and Management of the Post-Phlebitis Syndrome by Dr. Alton Oschsner, Jr., New Orleans.

The Sunday morning session will be addressed by Dr. William M. Sheppe, Jr., University of Virginia, his subject being Medicine and Religion. The worship service will be conducted by Dr. Ariel L. Goldberg, Rabbi, Congregation Beth Ahabah, Richmond.

A complete program may be obtained from the Virginia Academy of General

Practice, 4205 Dover Road, Richmond 21, Virginia.

Course in Nasal Surgery.

An introductory course in Expanded Surgery of the Nasal Septum and Closely Related Structures will be presented at the Medical College of Virginia, April 28-May 1. The course will consist of lectures, laboratory and surgical demonstrations and will be under the sponsorship of the Department of Otolaryngology with the cooperation of the American Rhinologic Society. Dr. Peter N. Pastore, professor of otolaryngology and chairman of the department, and Dr. Maynard P. Smith, associate clinical professor of otolaryngology (rhinology), have arranged the program. Mr. Maurice H. Cottle, professor of otorhinolaryngology, Chicago Medical School, will be the guest director, and in a series of lectures will also discuss historical, embryological and anatomical considerations.

A preliminary program or other information may be obtained from Dr. Kinloch Nelson, director, continuation education program, Medical College of Virginia.

Lecture Series.

Some of the future programs in the lecture series of the Lynchburg Training School, Colony, are:

May 2nd—Dr. Alanson Hinman, assistant professor of pediatric neurology, Bowman Gray School of Medicine, Winston-Salem, North Carolina—Reduction of Drug Therapy Through Therapeutic Attitudes in the Environment.

May 16th—Dr. Bernard Scher, chairman, department of social work, West Virginia University, Morgantown, West Virginia—Disturbance or Retardation: A Question in Diagnosis and Treatment; and Work with Parents of the Retarded.

June 20th—Dr. James D. Beaber, coordinator, Education exceptional children, University of Virginia—topic to be announced.

Further information about these lectures may be obtained from the School.

Deaths from Mycetism.

The National Registry of Deaths from Mycetism maintains a file of deaths attributed to ingestion of wild mushrooms (1957 to date). Physicians are requested to send notice of all such deaths (age, sex, date, locality) to Dr. Robert W. Buck, Secretary,

Obituaries

Dr. William Almon Shepherd,

Richmond, died February 22nd, at the age of eighty-seven. He was a graduate of the Medical College of Virginia in 1904. Dr. Shepherd was pathologist for Johnston-Willis Hospital and was a former teacher of histology, pathology and embryology at the Medical College of Virginia. He was joint author of a textbook on communicable diseases. Dr. Shepherd had been a member of The Medical Society of Virginia for fifty-nine years.

He is survived by his wife and three sons. One of them is Dr. Eugene Bowie Shepherd, also of Richmond.

Dr. Robert Eubank Booker,

Lottsburg, died February 25th. He was eighty-two years of age and graduated from the University of Maryland, School of Medicine, in 1902. Except for a short time at Warsaw, Dr. Booker had practiced in Lottsburg since his graduation. He had been active in civic affairs, having served as Northumberland County supervisor and chairman of the board. He had also been a member and chairman of the school board for many years. Dr. Booker had continued his active practice with two sons until three weeks before his death. He was an honorary member of the Heathsville Masonic Lodge. Dr. Booker was a charter member of the

Massachusetts Medical Society, 22 The Fenway, Boston 15, Massachusetts.

Obstetrician-Gynecologist

Wishes to relocate in Virginia for family reasons. Age 39, university trained, board eligible, with teaching experience. Currently in private practice in Seattle. Available July. All possibilities considered. Write Dr. Robert Hodges, 10624-226th Street, S. W., Edmonds, Washington. (*Adv.*)

Northern Medical Society which last year presented him a plaque in recognition of his long practice. He had been a member of The Medical Society of Virginia since 1905.

His wife and three sons survive him. Two sons in practice with him are Drs. C. L. and J. M. Booker.

Dr. Meade Castleton Edmunds,

Petersburg, died March 5th. He was seventy-five years of age and a graduate of the Medical College of Virginia in 1911. Dr. Edmunds specialized in ophthalmology and was a past president of the Virginia Society of Ophthalmology and Otolaryngology. He had practiced in Petersburg for forty years. Dr. Edmunds was also a past president of the Petersburg Medical Society and had been a member of The Medical Society of Virginia for forty years.

His wife, two daughters and a son, Dr. Meade C. Edmunds, Jr., survive him.

Dr. Nelson.

The death of Dr. Charles Morris Nelson leaves an unbelievable gap in the ranks of the Richmond medical community. He was so full of life, confidence, and ability it is hard to accept the fact that he has left us.

His wide range of interests and talents enabled him to excel in such divergent fields as medicine, golf, fishing, painting, sculpture and bridge. His short life was filled with immense activity.

The son of a highly respected Richmond physician, Dr. John Garnett Nelson, Dr. Charles Nelson attended McGuire's Preparatory School, received his undergraduate and medical education at the University of Virginia. After a year's internship at the New York Post-graduate Medical School and Hospital, he served a residency in general surgery at the Medical College of Virginia under Dr. I. A. Bigger. He then became associated with Dr. A. I. Dodson in the practice of Urology. He married Charlotte Purcell who died in 1961. They had a daughter and two sons. In addition, he is survived by a brother, Dr. Kinloch Nelson, and a sister, Mrs. Hugh Redd. Dr. Nelson served in World War II, attaining the rank of Commander in the United States Navy.

Professor of Clinical Urology at the Medical College, President Elect of Richmond Academy of Medicine, Diplomate American Board of Urology, he was a member of the American Urological Association, attending Urologist at Richmond Memorial Hospital, Johnston-Willis Hospital, St. Luke's Hospital, St. Elizabeth's Hospital, Grace Hospital, Stuart Circle Hospital, and the Retreat for the Sick Hospital 1951 and Chairman, Richmond Urological Society 1960-1961.

His ability was great, his accomplishments outstanding, but it was as a charming, delightful, loyal friend and doctor that he will be the most missed.

NOW, THEREFORE, BE IT RESOLVED:

1. The Richmond Academy of Medicine hereby records its great loss in the sudden death of its President-Elect on December 31, 1962.
2. By this resolution, its recognition of his ability and accomplishments is made a matter of permanent record in the minutes of the Academy.
3. The Secretary is requested to forward a copy of this resolution to his daughter, and his two sons, and convey to them the sincere sympathy of the membership of the Richmond Academy of Medicine in the loss of their father and our friend.

HERBERT C. LEE

JOHN BELL WILLIAMS

JOHN ROBERT MASSIE, JR., *Chairman*

Dr. Vultee.

Dr. Frederick Edward Vultee, Jr., passed away suddenly on the evening of the 4th of December, 1962, at the age of thirty-seven. In his last moments he showed the same devotion to his fellow man that characterized his entire life. Suffering from an attack of ventricular fibrillation while driving home, he managed to pull his car off the road and bring it to a stop before death claimed him.

Dr. Vultee was born in Fremont, Ohio, on the 10th of February 1925. Following graduation from his home town high school he attended Yale University, receiving his B.S. degree in 1948 and his M.D. in 1950. He served an internship at Walter Reed Army Hospital. Appointed to a residency in Physical Medicine and Rehabilitation at the same institution, he completed this program in 1954. From then to 1957 he served on the Physical Medicine staff where he became Assistant Chief of Service. Upon his resignation from the Army he received a special citation awarded for his "... enthusiasm, initiative, ambition . . . understanding, skill and professional ability". He was certified by the American Board of Physical Medicine and Rehabilitation in 1956.

He was an Associate Professor of Physical Medicine and Rehabilitation at the Medical College of Virginia from 1957 to 1959. Following a year as Associate Director of the Rehabilitation Institute of Chicago, he returned to the Medical College as Professor and Chairman of the Department of Physical Medicine and Rehabilitation, a position he held at his demise.

Dr. Vultee contributed significantly to the literature in his specialty. He was elected to membership in the American Academy of Physical Medicine and Rehabilitation, the American Congress of Physical Medicine and the American Rheumatism Association. He was a loyal member of the Richmond Academy of Medicine and The Medical Society of Virginia. His reputation within his field was international, and he brought honor upon the Medical College of Virginia and the Academy by his scientific contributions and his teaching activities. He was beloved by his students, his patients, and his associates.

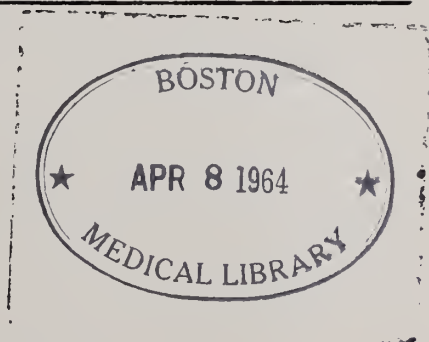
Fred had a lively and keen sense of humor about his life, his work and the world about him. An inexhaustible supply of stories was shared with his friends and patients. He was no narrow minded scientist but rather had the sense of joyous exploration about life that marks off the great from the mediocre. He was a deeply religious person, serving through much of his life as an acolyte in the Episcopal Church and later as an instructor of acolytes. He approached God as he did life, with pleasure and involvement and personal dedication.

His life was not long in years but it was a full life, a life of lasting accomplishment and value. We shall all remember him, and be better men for our having known him.

May we as his Academy of Medicine extend our deep sympathy to his wife, Janet Harlow Vultee, and to his children and send a copy of this resolution to them and also to The Medical Society of Virginia for publication in the Virginia Medical Monthly.

RICHARD G. LESTER, M.D.

Guest Editorial



Why Did Stonewall Jackson Die? (Could He Have Been Saved?)

THE ANSWERS to these questions are intriguing. If this famous general's life had been spared at Chancellorsville the subsequent history of our country might have been greatly altered. He would probably have survived under two conditions, viz: (1) providing that the diagnosis of his pulmonary infection after the amputation of his left arm was correct and (2) if modern wartime care of the wounded had been available to him. This, of course, includes rapid evacuation by helicopter or plane to a hospital in the rear and adequate use of blood transfusions and antibiotics.

It is important therefore to re-examine critically the only available first hand description of the wounds and last days of Stonewall. Hunter McGuire, Chief Surgeon of Jackson's Command, provides this in a remarkable article published in *The Richmond Medical Journal* in May 1866. He records here the primary cause of death as "pleuro-pneumonia", due to contusion of the lung from a fall, with subsequent extravasation of blood into the chest cavity.

McGuire's description of the daily symptoms and objective signs in his close friend and patient are brief, clear, and explicit, but the bedside notes giving a record of the vital signs etc. fell into Federal hands. The paper has become famous because of the stirring spiritual passages dealing with Jackson's heroism and because it reveals the intimate relationship which existed between these two distinguished men.

One should hesitate to seek a flaw in such a splendid article, but the author of this guest editorial has wondered for many years whether Stonewall's death was not actually due to pulmonary embolism or to some other cause than "pleuro-pneumonia". A fuller discussion of this possi-

bility will appear in *The Archives of Internal Medicine* for May 1963. At this time only a short summary will be presented.

McGuire was a most accurate observer. He does not describe the physical signs heard in the lung, but we presume he made the diagnosis of "pleuro-pneumonia" because of pain in the patient's chest on deep breathing, with percussion dullness, suppressed or increased breath sounds over the area of pain, and perhaps a friction rub. These signs, however, may be caused by a pulmonary infarct just as readily as by pneumonia. McGuire's statement that pneumonia was due to extravasation of blood from a contused lung is hard to accept, particularly as no signs developed until the sixth day after injury. The terminal delirium during the last 24 hours of life would have appeared earlier if due to a toxic pneumonic process. Pulmonary embolism of massive type may produce delirium also.

One may reasonably ask if not pulmonary embolism, what else could have caused the death? The clinical picture does not fit septicemia. McGuire would certainly have made some reference to septic fever, sweats, chills and an early toxic state. Delirium in such a case would have appeared before the last 24 hours preceding death.

Because of the frequent occurrence of pulmonary fat embolism following fracture of the long bones, one cannot exclude the possibility of some degree of this pathological condition. However, fat emboli involve only the smaller pulmonary vessels. They produce dyspnea and delirium (both of these were terminal symptoms in Jackson's case) but never cause chest pain or infarction of the lung.

The true diagnosis will probably never be definitely known because there was no postmortem examination. However, pulmonary embolism with a small infarct, followed by massive thrombosis due to a slowly developing laminated clot appears to be correct answer to the question "Why did Stonewall Jackson die?" If Jackson had had pneumococcus pneumonia with acute fibrinous pleurisy, as McGuire believed (he called it "pleuro-pneumonia"), penicillin might easily have saved him. On the other hand, if he was suffering from massive pulmonary thromboembolism there was no chance of recovery 100 years ago. It is evident therefore that there was small likelihood of saving Stonewall's life in 1863 whatever the true cause of death may have been.

L. WHITTINGTON GORHAM, M.D.

*Department of Pathology
The New York Hospital—Cornell Medical Center
1300 York Avenue
New York 21, N. Y.*

The Preferred Medical Reference Books of Civil War Times

GORDON W. JONES, M.D.
Fredericksburg, Virginia

Here one gets a fascinating look into the medical texts in use a century ago.

ONE CAN BEST APPRECIATE a long-dead generation by studying the books they enjoyed, used, or wrote. Such a study is particularly enlightening to anyone interested in the way the Civil War doctor thought and worked. Fascinated hours may be spent over a not-too-expensive collection of a dozen or so of the most important medical books of the time. How can we determine what books were considered valuable by the medics of that day? First we may consult such works as *The Medical and Surgical History of the Rebellion* (two volumes in six parts, Washington, D.C., 1870-1888). One of the editors of this vast treasury of before-enlightenment information listed Bennett, Wood, and Watson as the authors of the prime medical reference works. A better list, however, and fuller, and more contemporary, and thus possessed of a more authentic feel, is one found by the writer in the National Archives. It was located in the records of one of the Union army medical examining boards. Since these boards were entrusted with granting the exalted commissions of Surgeons of Volunteers to properly qualified physicians, they were obliged to have the proper reference books at hand to back up their very tough examinations. These examiners failed as many as ninety percent of applicants. The applicants then had to enlist as privates or hospital stewards, be "contract surgeons",

wangle state commissions, or stay home.

The list, expanded bibliographically, will be found at the end of the present article. Only editions most contemporary with the War are included. Some of the more interesting or more readily available ones will be briefly discussed.

Strangely absent from the National Archives list is the important work of Sir Thomas Watson (1792-1882). Since it is quoted so frequently in *The Medical and Surgical History* as of prime importance, his *Lectures on the Principles and Practice of Physic* may be justifiably noted in the body of this article. The copy at hand is the 1844 Philadelphia edition, a one-volume work of 920 pages (by 1857 it had become a two-volume affair with respectively 871 and 984 pages). No one has ever written medical prose more fluently than Sir Thomas. Even today, though many of his notions are of course antiquated, there is profit and pleasure in reading him. He was one of the most prominent London physicians of his day. As such he held various professorships, attended the royal family, and enjoyed a huge practice. He certainly presented little that was new, but he distilled into almost melodious prose the medical knowledge, lore, and errors of his lifetime and century. In his lectures he ran through the whole gamut of internal medicine as it was known then. The book became the most important medical text in England, perhaps in the English-speaking world. Reading him one is almost hypnotized into reaching for the Lancet to treat the next case of pneumonia. Most eloquently did Watson preach the efficacy of bleeding pneumonia patients: while the patient was reclining upright, enough blood was removed to induce fainting (shock to

you and me). He claimed that the relief was miraculous. It must be admitted that in the 1857 edition he muted his venesection claims. He then championed bloodletting only for the robust, sthenic type, not for the asthenic. Apparently he thus proposed to give the strong and the weak an even start in the fight against pneumonia. Incidentally, our Civil War doctors seldom bled pneumonia patients: practically all were asthenic, you see.

John Hughes Bennett (1812-1875) lived within the lifetime of Watson. He was, however, of a far more analytical temperament. Watson seemed to believe everything he had been taught. Bennett was more likely to credit nothing he had not personally critically examined. Thus, in his *Clinical Lectures* he very positively opposed bleeding for pneumonia. And so, this University of Edinburgh professor was more advanced than his London colleague.

The American, George B. Wood (1797-1879) agreed with Watson. This almost exact contemporary of the English medical knight had a parallel career in Philadelphia, wrote prolifically, and had great influence through his *Treatise on the Practice of Medicine*. He agreed with Watson in asserting that pneumonia in persons with vigorous constitutions is best treated by bleeding. Wood also wrote *A Treatise on Therapeutics and Pharmacology*, a huge work which gave me license to remark in my notes, "I think that the less they knew, the more they wrote."

Dr. Wood also collaborated with his friend Dr. Franklin Bache (1792-1864), great-grandson of Ben, in the huge *Dispensatory of the United States of America*. Bache was professor of chemistry at Jefferson Medical College. He was the sort of fanatic on the subject and importance of chemistry as makes many medical students groan even today. In this *Dispensatory* can be found a fantastically detailed discussion of every substance or concoction which could conceivably be used in medicine. The 1858 edition boasts 1583 pages of fine print. To

water, which we still use occasionally, Wood and Bache devoted nine pages; to strychnine which we use very little, six; to antimony which in temperate America we use even less, twenty. Sarsaparilla rated five pages, only one page less than did iron ("ferrum" always) which interests us much more.

Another Philadelphia professor was Robley Dunglison (1798-1869), the one-time adopted Virginian of whom Jefferson was so fond. Dunglison spent too much time on his vast amount of writing to have time for profound thinking or research. Of all his works the medical examiners chose only his medical dictionary. And a fine book it still is, full of the lore which doctors loved in the years before they entered on the most recent breath-taking half-century of progress.

For the next two items we turn again to the English writers. First is a fine book by a surgeon who became perhaps the pioneer dermatologist of England. Sir William James Erasmus Wilson (1809-1884) chanced upon the relatively unworked field of skin diseases and turned his quite considerable abilities in that direction. As a pioneer treatise his book on the subject is interesting and of some practical value even today, if you are good at weeding.

As great a pioneer in his field as Wilson was Joseph Toynbee (1815-1866) who, in his student days, became fascinated by the ear. During his professional years he practically created the specialty of aural surgery. His book on the subject has a quite modern spirit. He died, incidentally, during a self-experiment on chloroform.

As Toynbee and Wilson more or less created their specialties, so Rudolph Virchow (1821-1902) started men a-thinking about that fundamental unit of life, the cell. We are impressed and, frankly, surprised to find such an advanced book as that by the great German, in its first edition in English, on the list of "must" books. *Cellular Pathology* was epoch-making and we can be proud of the fact that it received such immediate acceptance by leading American doctors.

Thus, an applicant had to know the book before he would be granted a commission. Likely he had to agree that every cell comes from a cell and to think that disease processes are largely due to conflicts between cells, or he stayed a civilian.

Surgery was, of course, of pressing interest to the army doctor. Several books were important. Since a man had to know how to bandage, there was no better book than that of Fitzwilliam Sargent (1820-1889), a Philadelphia physician. His book went through many editions, in several languages, even Japanese. In it he also included detailed formulas and directions for the preparation and use of lotions, ointments, liniments. He explained the methods of arresting hemorrhage (not so simple then as now in our day of asepsis). The 1862 edition had an additional chapter on gunshot wounds.

Accounts of actual experiences in foreign wars were in demand. Sir George H. B. MacLeod (1828-1892) had first published his *Notes on the Surgery of War in the Crimea* in London in 1858. Sir George enjoyed great prestige and what he had to say about wounds was considered important. His book was published both in Philadelphia and Richmond in 1862.

An even greater stamp of approval was given George James Guthrie (1785-1895). His book on war medicine and surgery as it was practiced in the early years of the nineteenth century was so impressive that it was specifically ordered published by the U.S. Army in 1862, in Philadelphia. We may smile a bit at such reliance on an experience gained two generations before our war, but medicine really did not advance very fast in those days. Furthermore, the author had revised it shortly before his death. To us this book gives a vivid glimpse of another day and way. For horror one should read the chapter on the now-extinct hospital gangrene. For a lesson in pure surgical aplomb one should read his paragraphs on bleeders. In part he wrote,

"In amputation at the hip joint the femoral and profunda arteries are fre-

quently divided . . . and bleed furiously if disregarded; but the slightest compression between finger and thumb stops both at once . . . surgeons should learn to hold all arteries that can be taken between the finger and thumb in contempt. It is impossible for a man to be a good surgeon . . . (unless) . . . he surveys the scene with perfect calmness, taking the great artery between the finger of one hand, he places the points of all the other fingers, of both hands if necessary, on the next largest vessels. . ."

Evidently fingers were made before clamps. You pinched the bleeders until some assistant found a piece of oiled silk. No one paid any attention to the capillary ooze which frets some moderns. The whole distinguished book by a distinguished London surgeon makes fascinating reading.

In 1862 the surgeon general gave sanction to still another book. Joseph Janvier Woodward (1833-1884), one of the very ablest men in the Federal service, had compiled *The Hospital Steward's Manual* as an instruction book for all enlisted attendants. The hospital steward was the surgeon's assistant, in both field and hospital, both administratively and medically. In private life he had often been a pharmacist, sometimes a medical student, and, occasionally even a physician. He ranked one cut above a first sergeant. In the hospitals the stewards had immediate jurisdiction over ward-masters, nurses (male and female), laundresses, cooks, and so on. The manual was needed because it gave brief instructions to these hospital stewards, who came to the service in droves out of civil life, in the management of wards, kitchens, pharmacies, and even in many of the details of the minor surgery of the time (bandaging, cupping, etc.). Furthermore, the surgeon himself, also a recent civilian, needed this book in order to know what to expect of his steward. After all, steward and master couldn't just stare at each other.

In the midst of all these books, very obviously pertinent to an army surgeon's

calling, was one book the presence of which is a little surprising. But its presence proves that the surgeons were expected to be well-educated. Toward the end of the non-alphabetical list is a book on obstetrics by Charles D. Meigs (1792-1869). He was a Philadelphia practitioner and a professor at Jefferson.

The last book we will mention in this discussion is that by Theodoric Romeyn Beck (1791-1855) and John Brodhead Beck (1794-1851). They wrote a huge manual entitled *Elements of Medical Jurisprudence*. It is interesting because it shows how important this field was considered in those days. Every school had a course in it. Yet, the writer recalls that the subject was barely mentioned as such in his medical school days. The vast work of the Becks exhausted every angle of death, suicide, insanity, poisons, pregnancy, feigned diseases, and so on.

Such is a glance at a number of the books which were considered the cream of the medical literature of the Civil War times. All on the original list are described in the bibliography. All have been examined by the writer either in the National Library of Medicine or in his own library. From this study of the books and of the list as a whole a few reflections arise. First is the question as to why no anatomy or physiology was selected, unless we consider Virchow's book a physiology. Were the examiners so expert on those subjects that they needed no help? A chemical text was mentioned but a search of all the bibliographies turned up no book by that author.

One of the most striking facts is the preponderance of Philadelphia books on the list. No other American city is honored in this Union list. Furthermore, most of the American authors were Philadelphians. Only the Becks were New Yorkers. There can be no more striking evidence of the fact that Philadelphia was America's medical capital a century ago.

Lastly, a study of the books themselves shows why these particular ones were select-

ed out of the vast medical flood of the 'fifties and 'sixties. Doctors liked to rush into print then as now. But these, except for Woodward's book which is dry as dust, are all well written. In places they are even exciting. They are detailed. They are authoritative, written by men of vast experience. We may conclude by remarking that while those doctors were grossly mistaken in some respects by our standards, they were great physicians and surgeons whom we would welcome as colleagues today.

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New Drug Advertisements

Will this (new drug) law and the regulations hurt journal advertising? It is difficult at this point for me to give a categorical answer to this question. Certainly, we are not going to stop advertising. The requirement that we give a brief summary relating to side effects, contraindications and effectiveness will not deter manufacturers from advertising provided the regulations are reasonable. However, there is one respect in which I am afraid all advertising will be affected. Our largest advertising budgets are devoted to the promotion of new products. In my opinion, present administrative procedures and the requirements of the new law will indisputably slow down the development and marketing of new drugs, which means that each year we will have fewer new drugs to advertise. However, as an offset against this, having invested more in the development of a new drug, we will be willing also to invest more in its promotion because we can't take a chance of faltering in this final payoff step. And, it is entirely possible that the net effect on journal advertising will be unchanged in the long run.—Theodore G. Klumpp, M.D., President, Winthrop Laboratories, in *Rocky Mountain Medical Journal*, Dec. 1962.

The Role of the Medical Staff in Graduate Medical Education

HARRISON PICOT, M.D.
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The role of the community hospital and its medical staff in graduate medical education is uncertain. This situation is of vital concern to all physicians.

SEVERAL YEARS AGO the Alexandria Medical Society created a committee to study the currently changing trends in medical practice. Much of the work of this committee has been devoted to a consideration of the community hospital, its role in graduate medical education, its present and future relation to the total tapestry of medicine.

If there is a central theme in the sphere of medical practice, the theme is change.

Large segments of the population have left the cities. Suburb after suburb has arisen. The community hospital has appeared. There has been acceptance of the philosophy that medical care is a right—not a privilege—of all people. Communities are financing clinics and hospitalization for the needy sick. These community hospitals are now staffed with well-trained men. They can provide all but the most unusual or specialized medical or surgical care.

Changes that have occurred in Alexandria, Virginia, during the past 25 years, are:

The population has increased from 34,000 to 100,000.

Presented at the Second Interstate Scientific Assembly of The Medical Society of Virginia and the Medical Society of the District of Columbia, Washington, D. C., October 14-17, 1962.

Hospital beds were 97 and now are 378.

Hospital admissions have increased from 3,000 to 17,000 and newborns from 500 to 3,500 annually.

The medical staff consisted of 16 men, of whom two were specialists. The staff now numbers 120, of whom 74 have board or comparable certification.

The community hospital is an integral part of community life. Here its sick and injured, without regard to financial status, are cared for. Its medical staff is composed of all practitioners of medicine—general practitioners and specialists.

The standards of medical care and practice established by the staffs of community hospitals probably set the level of such standards for all hospitals in the community.

Community hospitals care for 67 per cent of all people hospitalized in this country.

Let us consider the composition of the medical staff of an average community hospital and its competence to take part in graduate medical education. That of the Alexandria Hospital, having 300 beds, is a representative one.

There are 62 members of the staff who are interested in the graduate medical educational program. These members have spent an average of eight years in the academic climate of medical school, internship, residency or fellowship. Teaching appointments, past and present, have been, or are, held by 32 per cent of the staff. Fifty-eight per cent are certified by their Specialty Board or by the American College of Surgeons or American College of Physicians. All of the remainder are board eligible.

Why should the staff of a community hospital desire a graduate educational program?

- (1) There is no question of the fact that such a program provides a stimulus to the staff. The very existence of such a program is an assurance that the medical staff will remain abreast of current trends in all facets of medicine.
- (2) A graduate training program results in an elevation of the level of medical care in the community.
- (3) Many of the staff have a genuine interest in teaching. I would like to point out that the preparation of a man or woman to practice a medical specialty is identical with that of those who remain in the field of education.

Another reason that such a program is desired is one about which there has been a great deal of unrealistic discussion and statement.

If graduate medical education is purely education, as believed by some, there should be tuition fees for these years as there are for the undergraduate years. All know that interns and residents receive a salary. I believe this to be tacit acknowledgement that interns and residents perform work. I further believe that honest acknowledgment of this fact will be helpful.

The interns and residents absorb the major load of the care of the service patient.

There are many difficulties encountered by the staff of a community hospital which attempts to present a graduate training program. I will simply summarize them as follows:

There may be a lack of interest in, and understanding of, the importance of such programs by the Hospital Board, Administrator, medical staff or departmental heads. There may be inadequate facilities for teaching certain subjects. There may be no real evaluation of the worth of individual members of the staff to the program. There may not, and probably will not, be enough applicants to fully round out the program. The medical school hospital training pro-

grams are going to attract the highest caliber of applicants. The problem of adequately and maturely training the residue—many of whom are graduates of foreign schools—presents a great challenge.

After 17 years of effort to mount a complete graduate training program we have reached certain conclusions:

The community or voluntary hospital is oriented towards the rendering or distribution of medical care.

It should not be asked, or expected, to compete with the medical school hospitals in the area of graduate medical education. It is the exception that a community hospital can provide a total program.

In our opinion all graduate medical education should be conducted or supervised by our medical schools. At the present time their facilities are inadequate to perform this task in its entirety. In 1961 there were 15,104 more residents and interns than there were positions available in medical school hospital and affiliated programs.

If medical schools are to assume responsibility for all graduate medical education they will have to increase their facilities or utilize other existing facilities. The performance of this task should be cooperative rather than competitive.

Graduate education may, in one sense, be divided into a further presentation of medical theory and into the application of this theory in practice. In this latter area the community hospital has much to offer. It has hospital beds; it has service patients who are hospitalized without selection; it has clinics, emergency rooms and tumor boards; it can offer a picture of medical practice at community level, both in the hospital and in the office; it can offer staff members interested in and capable of teaching. It is our belief that most medical staffs would offer all cooperation that the medical schools felt necessary to assure a coordinated program within its hospital.

Those who practice medicine and those who teach it spring from a common source,

are motivated by similar ideals and share a common objective. Yet the teaching area seems insulated from the area of practice. Those in practice are conscious of the need for a closer and continuing contact with those whose primary aim is education. Some means must be found to satisfy a hunger for greater medical knowledge, which, at the present time, is unsatisfied.

We subscribe to the premise that medical schools should assume a continuing educational responsibility that carries throughout a doctor's active professional life. We believe that such responsibility can most effectively be carried out at the community hospital level.

Such a change in the orientation of graduate medical education can only be initiated by the medical schools themselves.

The one most important factor in this concept of expanded medical school influ-

ence is the renewal of personal contact between educator and practitioner. Such contact would logically result in educational stimulation with a comparable elevation in the level of community medicine. A clearer understanding of the objectives and problems faced by the medical schools would also be achieved. Support of these objectives by physicians in general, we believe, would increase greatly.

Conversely, educators would have a similar opportunity to achieve an understanding of the problems presently encountered in the active practice of medicine.

It is our belief that the role of the medical staff of a community hospital in graduate medical education is to crystalize and enunciate its philosophies in this connection, and to strive for their fulfillment.

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Surgical Progress in Arterial Disease

As a result of surgical advances during the past 10 years, it is now possible in many patients to restore circulation to the lower leg and foot affected by hardening of the arteries.

Treatment of obliterative atherosclerotic disease of the arteries supplying the lower limbs is much more effective today than it was 10 years ago, Dr. Robert R. Linton, Boston, said in the January 19th Journal of the American Medical Association.

"It is almost miraculous to see how well the reconstructive arterial operations that are being performed today on these patients restore the arterial circulation to the lower limb, with relief of symptoms and the salvage of many extremities."

The disease is probably one of the most common circulatory diseases afflicting man. It is increasing in incidence because the victims primarily are older persons and more persons are living longer. Although surgery is the best treatment for most persons with this disease, operations cannot be performed in all cases. Surgery is frequently impossible for persons with diabetes and for a number of others because of advanced age and the severity of the disease.

However, it is not unlikely that ways of preventing the disease will be so improved in the future that many of the current surgical procedures can be avoided.

Dr. Linton is affiliated with Massachusetts General Hospital.

Some Pitfalls in the Radiologic Diagnosis of Gastric and Duodenal Ulcer

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Unless the radiologist is on guard when examining the stomach and duodenum, he may be deceived by these conditions.

THIS IS A DUODECENNIAL REVIEW of the pitfalls encountered in the radiologic diagnosis of gastric and duodenal peptic ulcer under the very favorable conditions of one examiner and of consistently detailed radiologic primary study and follow-up, imposed by a small community hospital.

Statistical analysis of my material and the radiologic differentiation between benign and malignant ulcer are beyond the scope of this paper. Nor will the well recognized difficulties of a differential diagnosis of ulcer in the canalized or funnelform antrum be further considered.^{21,22}

1. The spurious crater: Obviously, a firm radiologic diagnosis of ulcer cannot be made without demonstrating the crater itself, which should be possible in 60% or more of the patients.^{2,3,29} So strongly has this necessity of demonstrating the crater been impressed upon the radiologic consciousness that the warning of Gutman is pertinent:²⁰ "If formerly you feared that the radiologist was going to overlook the ulcer, now it appears that describing an ulcer that does not exist is becoming increasingly frequent" (*translation mine*).

If the crater is so susceptible to firm radiologic demonstration, the discrepancy between the frequency of multiple ulcers

demonstrated pathologically, and the infrequency of multiple ulcers demonstrated radiologically, is disturbing. For example, of 50 surgical specimens, multiple ulcers were present in 17, none of which were diagnosed radiologically.⁹ In a second series, multiple ulcers were present in about 8 percent, and over half of the multiple ulcers were not defined radiologically.¹⁹

The spurious ulcer crater has received moderate attention^{16,17,19,24,25,36,37,38} but disproportionately small to the size of the problem:

That hoary *pons asinorum*, the fortuitous accumulation of barium between folds, may be surprisingly persistent (fig. 1). These spot-films were made in no purposeful haste. The clue to the true diagnosis lies in the practical identity of the surrounding mucosal pattern on all three exposures. The region was completely normal the following day.

The persisting fleck in figure 2 with abnormal surrounding mucosa prompted a radiologic diagnosis of peptic ulcer crater. At exploration this patient was found to have a carcinoma of the pancreas and only adhesions around the bulb. The surgeon found no evidence of active ulcer. Admittedly, the usual techniques for excluding peptic disease in the stomach and bulb at the operating room table are far from infallible.^{2,19,29,31} This picture must represent either the depressed pit of a healed ulcer, discussed below, or reflex mucosal changes from pancreatic disease, a spurious crater in either case.

The *Dauerfleck* is a persistent accumulation of barium sequestered at either end of the pyloric ring.^{25,30} Figure 3A shows the

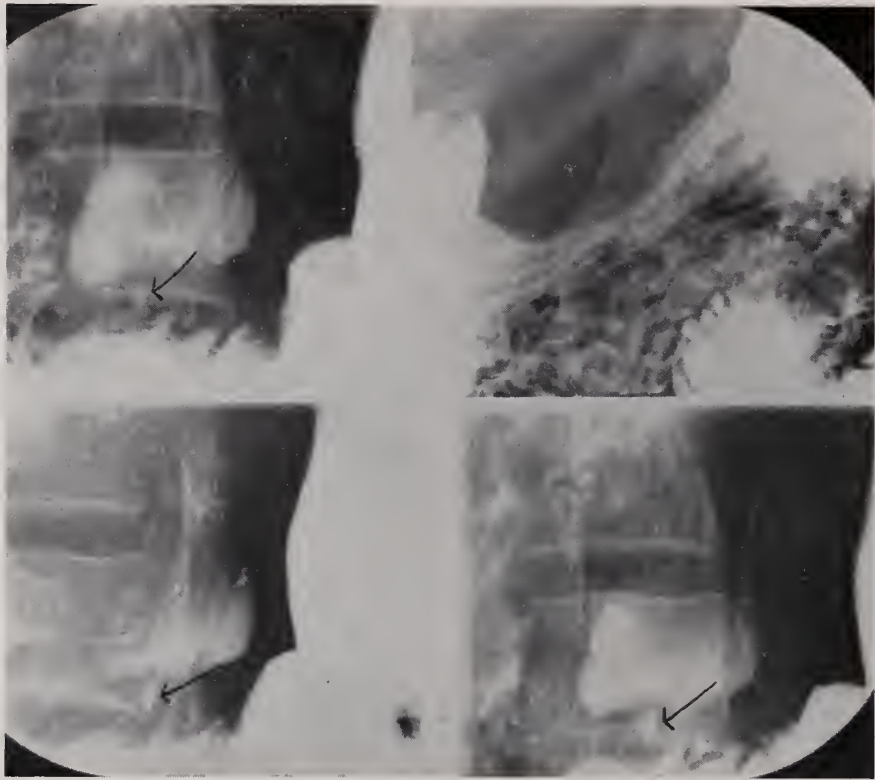


Fig. 1. Persistent accumulation of barium, spurious crater. Surrounding mucosa unchanged in all three exposures is clue; next day, normal.

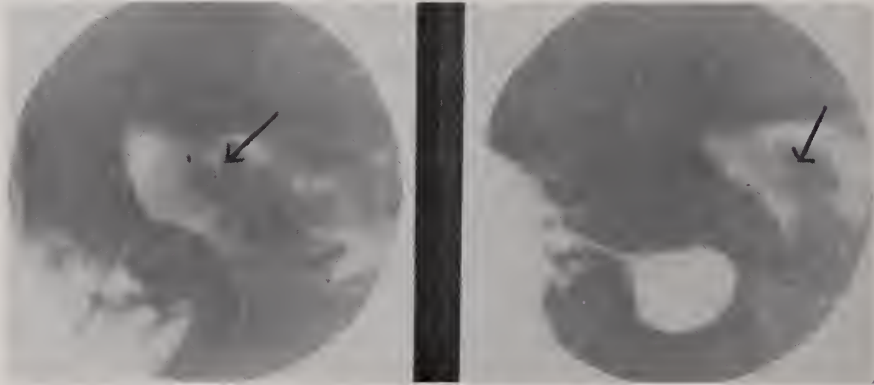


Fig. 2. Spurious crater, from either reflex mucosal change incident to carcinoma of the pancreas, or depressed ulcer scar.

usual *Dauerfleck*; fig. 3B demonstrates a fine radiating pattern from the *Dauerfleck*; fig. 3C illustrates an unusually large *Dauerfleck*, which is completely lost when the bulb is filled (3D).

The *Dauerfleck* must be differentiated from the pyloric ring ulcer. Note the abnormal length, contraction (or dilatation) of the ring, the sentinel folds (see below), the angular deformity in the base of the

bulb, and the flattening of the lesser curvature of the antro-pyloro-bulbar segment, in the true ring ulcers (fig. 4). (For a discussion of nomenclature of the distal portion of the stomach, the interested reader may consult reference 8.)

Familiarity with the normal mucosal disposition of the cardinal region of the stomach will prevent the misinterpretation of the central portion of the burnous as ulcer⁵ (fig.



Fig. 3. *Dauerfleck*, barium entrapped in end of pyloric ring, making spurious crater. A: usual variety; B: another patient, with radiating mucosal pattern from *Dauerfleck*; C: another patient, with large *Dauerfleck* (upper arrow) in incompletely filled bulb; lower arrows mark true limit of bulb; D: same patient; *Dauerfleck* lost with complete filling of bulb.

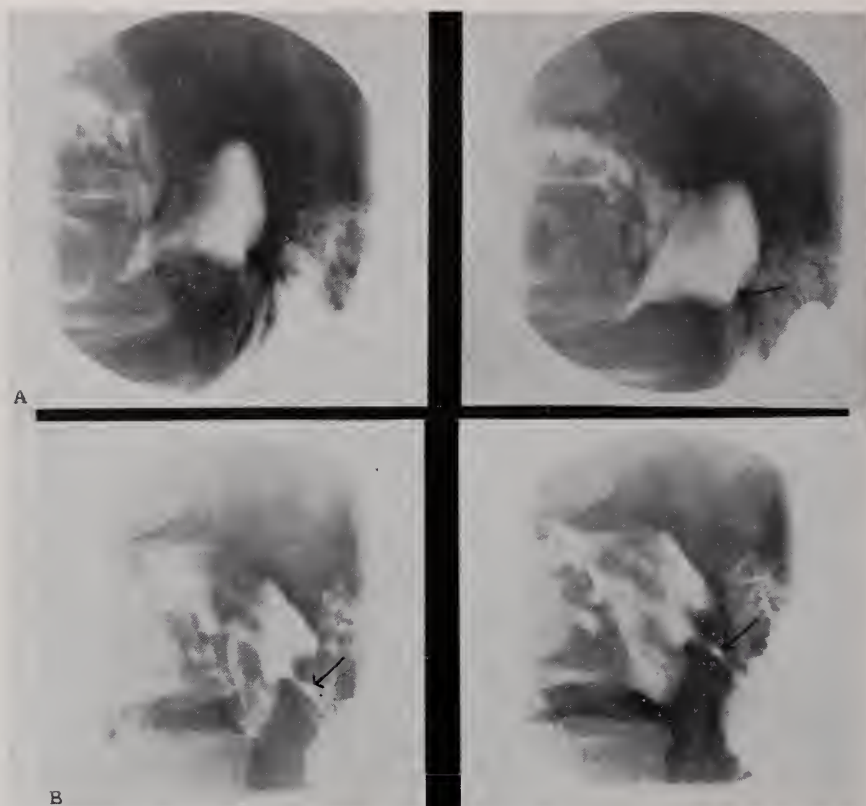


Fig. 4. True pyloric ring ulcer to be differentiated from *Dauerfleck*. A: base or bulb angular in place of straight, with fleck at apex of angle; note several antral folds leading to crater; B: another patient, with crater sitting in elongated, spastic ring.

5A). Nor should the central barium fleck of gastric adenomyosis cause difficulty⁶ (fig. 5B).

An oblique prepyloric mucosal fold with a mucosal furrow on its caudal side is a normal finding,²⁴ especially when the antrum is relaxed or partially contracted; the furrow may be taken as a niche on the lesser curvature. With further contraction of the antrum, the fold and its furrow change direction to lie longitudinally, and the "niche" disappears. This furrow has given no real problem in my experience. Morphine is said to be useful in resolving any doubt about the intactness of the prepyloric folds and the presence of ulcer.¹⁸

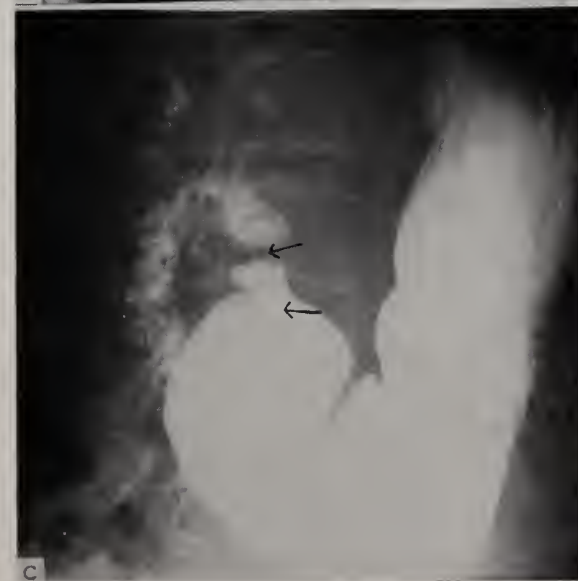
The depressed, completely epithelialized scar of an old ulcer with radiating mucosal folds may mimic the true crater. Garland¹⁷ estimates this occurs in about 5% of radiologically detected "craters". The greater the tissue deficit incident to the ulceration, the deeper the healed pit.

The technique of cine-radiography is admirably suited to eliminating the spurious and detecting the real crater, thus increasing the sensitivity of the radiologic method and at the same time not contributing to over-diagnosis.¹² No gastro-intestinal study can be called optimal without this technique. The value of cine-radiography in identifying the depressed, healed ulcer scar as apart from true crater, however, may be debatable.

Other technical aspects that promote the demonstration of the true ulcer crater include: 1. use of the higher radiographic voltages, 125 KV and above; 2. use of an optimal specific gravity for a given type and brand of barium suspension, arrived at empirically and held constant by use of a hydrometer; 3. use of an oblique central ray to "open" a horizontally disposed stomach, thus throwing the curvatures into better relief;¹⁰ 4. use of the few initial bulbfuls of barium as a mechanical cleansing agent to clear the mucosa of mucus, giving it better



Fig. 5. A: Spurious crater formed by center of burnous, which represents some barium held in the zone of transition between esophageal and gastric folds, as they stream down beneath the head-piece of the burnous. B: arrow indicates the central invagination characteristic of adenomyosis.



definition;^{14,36} 5. use of a fixed core of radiographic routine exposures to be supplemented as needed, but hardly ever reduced: these include the four standard exposures with overhead tube: anteroposterior, posteroanterior, right anterior oblique, and true

Fig. 6. Spasm from bulbar ulcer may be mistaken for the pyloric ring, especially with an unhappy combination of unpenetrating voltage and high density of barium. A: upper arrow shows obliterated segment, easily taken for pylorus; true pylorus (lower arrow) is hidden in roentgenographic "high-light". B: several weeks later, crater visualized, and pylorus (lower arrow) still hidden (operative proof). C: another patient, showing zone of obliteration from ulcer (upper arrow), but pylorus visualized (lower arrow) by better technical factors.

lateral (especially to detect post-bulbar craters). Aside from the customary spot-exposures, the one affording air contrast visualization to the proximal part of the stomach in a dependent position is vital.³² The first clue to the presence of ulcer crater may be furnished by only one from this battery of overhead and spot radiographs.

2. Difficulty may be encountered when the ulcer presents as a ring of spasm rather than as a crater,^{9,13} and this is mistaken for the true pyloric ring. The widely gaping or spastic true pyloric ring is proximal, and is either not recognized as such, or not visualized because of an unhappy combination of unpenetrating ray and dense barium suspension (fig. 6).

3. The second and third portions of the duodenum may be so distended as to direct



Fig. 7. Wide descending duodenum with bulbar crater demonstrated. False superior mesenteric axis syndrome.



Fig. 8. An expensive, medical odyssey that might have been prevented. A: called normal by several competent radiologists and gastroenterologists; note, however, the abnormal mucosal pattern as indicated by the four arrows; B: eight months later, again called normal; note the tendency toward fullness in the second and third portions of the duodenum, again unnoticed. At exploratory laparotomy, a greatly dilated second and third portions of the duodenum led the surgeon to do a duodeno-jejunostomy for the superior mesenteric axis syndrome. Symptoms continued. C: several months later, crater easily seen, duodenum of normal caliber, and stoma not functioning. Gastric resection with great improvement.

attention (of both radiologist *and* surgeon) away from the bulb itself towards the consideration of a mechanical obstruction in the third portion, the so-called superior mesenteric axis syndrome. This syndrome has been grossly over-reported.⁷ Without question, peptic or inflammatory disease in the stomach and duodenum is the common-

est cause for dilated duodena of this type (figs. 7, 8, 9).

4. Recognition of a sentinel fold as a presumptive sign of active ulcer should lead the examiner to a detailed examination of that region at the end of the fold, which may result in demonstration of the ulcer itself. Figure 10A shows this fold; figure

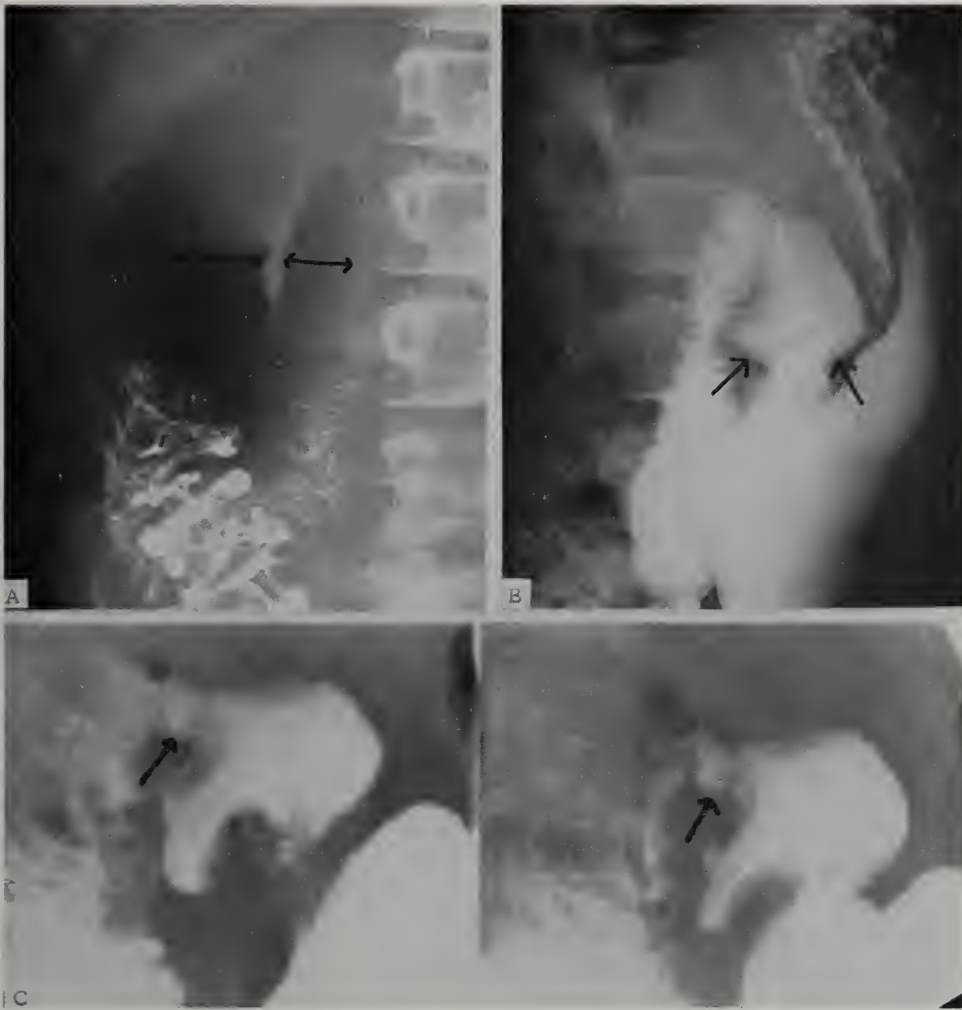


Fig. 9. Tremendously dilated second and third portions of duodenum noted on barium enema examination. B: the next day, duodenum only slightly dilated; angular deformity at base of bulb not noticed. Treated medically for superior mesenteric axis syndrome. One year later, emergency surgery for duodenal ulcer perforation. C: several months later, recurrence of crater, and gastric resection.

10B shows the very well defined ulcer eight months later (benign at surgery). Intensive study of the region at the end of the fold noted in figure 10A would probably have given some evidence of the ulcer so clearly shown later. The sentinel fold, or folds, are to be distinguished from the radiating mucosal pattern of the well established ulcer. The former occur early in the natural history of ulcer, one or few at most in number, and with no well defined radial arrangement; the latter occurs when the ulcer is well established and persists in the healing and healed phases,³⁶ tends to be multiple, sharp, and have a well defined radial pattern (fig. 11).

Sentinel folds are very common in the antrum in the presence of pyloric or antral ulceration. Even if the ulcer crater itself cannot be identified, the sentinel folds with such associated findings of gaping or spastic pyloric ring and spastic deformity of the lesser curvature aspect of the antro-pylorobulbar segment¹¹ will justify the tentative diagnosis of peptic disease in this segment (fig. 12).

5. Indirect signs (other than the sentinel fold): over the last few decades, these have been properly eclipsed by the direct sign of demonstrating the crater itself. Figure 13 shows a grossly abnormal mucosal pattern in the duodenal bulb; an acutely inflamed

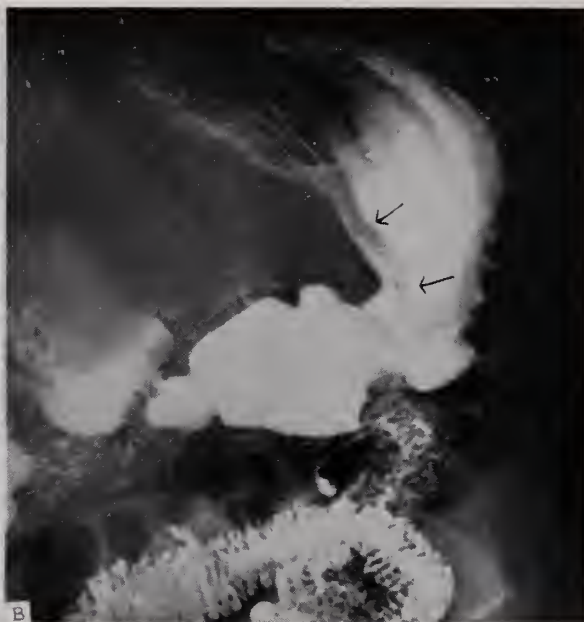


Fig. 10. Value of sentinel fold; A: note sentinel fold leading to greater curvature; B: eight months later, fold still present, and large benign gastric ulcer on greater curvature. Intensive study at the time of the first examination would probably have given more evidence of abnormality.



Fig. 11. Large ulcer in pars media, with its radiating mucosal pattern, to be differentiated from multiple sentinel folds. See text.

gallbladder and normal bulb were present on surgical exploration. Or a grossly disturbed (asymmetric) ejection pattern of the duodenal bulb may be present in cancer of the pancreas. Just these two examples

suffice to re-enforce, what is generally conceded, the fallibility of the indirect signs of ulcer diagnosis. However, to minimize their importance is to overlook many diagnoses of peptic disease. The presence of a disturbed, asymmetric ejection pattern of the duodenal bulb, of excessive secretion in the stomach with multiple small fluid-levels in the fundus with the patient upright, of coarsened rugal pattern on the greater curvature (26, 27) (fig. 14A), of finely granular rugal pattern frontally (fig. 14A), of persistently patent (or contracted) pylorus, of finely serrated gastric curvatures¹ (fig. 14C), of parietic antrum,²³ points to peptic or inflammatory disease with a certainty varying in proportion to the number of these indirect signs that are present, especially when disease in the gallbladder and pancreas can be excluded. Functional signs are a valuable addition to the radiologic picture, one of their merits being to draw attention to a small lesion which might have otherwise been overlooked.⁴ "Perhaps, compared with the morphologic signs, the indirect functional signs which today have fallen into disrepute, will acquire a new luster."²⁸

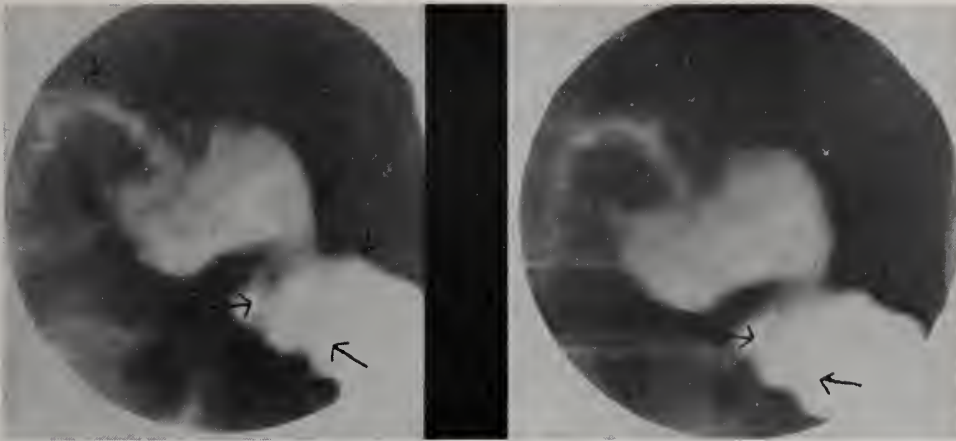


Fig. 12. Importance of functional signs in diseases of the antrum. Note flattening of lesser curvature of antro-pyloro-bulbar segment (upper arrows), sentinel folds (lower arrows), and persistently patent pyloric ring.

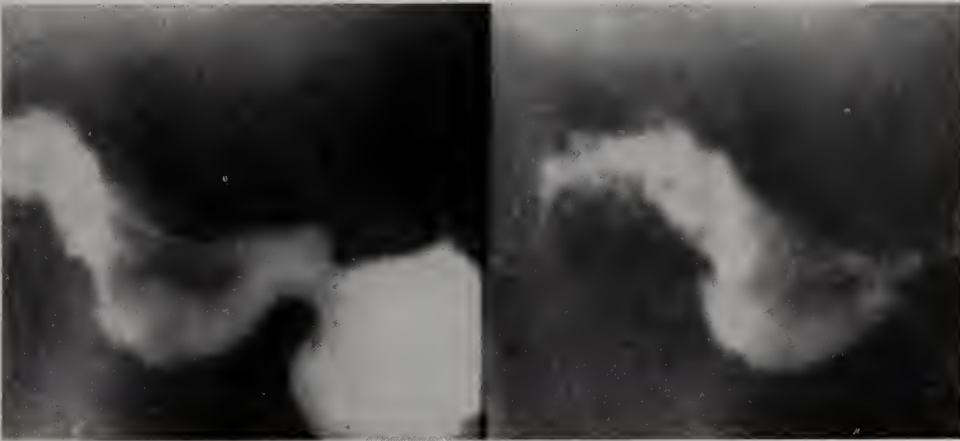


Fig. 13. Fallacy of indirect signs of duodenal peptic disease; severely distorted bulbar mucosa and contour with acute cholecystitis (surgery).

6. Mere size of the crater may confuse the radiologist.¹⁵ Figure 15 illustrates an abnormal configuration on the lesser curvature side of the antro-pyloro-duodenal segment, but well defined and identified as a large pyloric ring ulcer only after it had become smaller under treatment.

Summary

1. The unusually persistent accumulation of barium between folds, the *Dauerfleck*, the depressed scar following a crater, and the central accumulation of barium of the burnous and of adenomyosis, are to be recognized as not infrequent causes of the spurious crater.

2. The bulbar ulcer may be represented by a persistent segment of spasm mimicking

the pyloric ring, the true pylorus, either gaping or spastic, not being recognized proximally.

3. Dilatation of the second and third portions of the duodenum is much more commonly a result of peptic or inflammatory disease in duodenum or stomach than of obstruction of the third portion by the superior mesenteric artery.

4. The sentinel fold may be a useful early indicator of the presence of disease.

5. Other functional findings in the stomach and duodenum, although found with disease in other organs, are especially frequent in peptic disease, and their presence should not be disregarded.

6. At times, the large size of the ulcer may lead the radiologist astray.

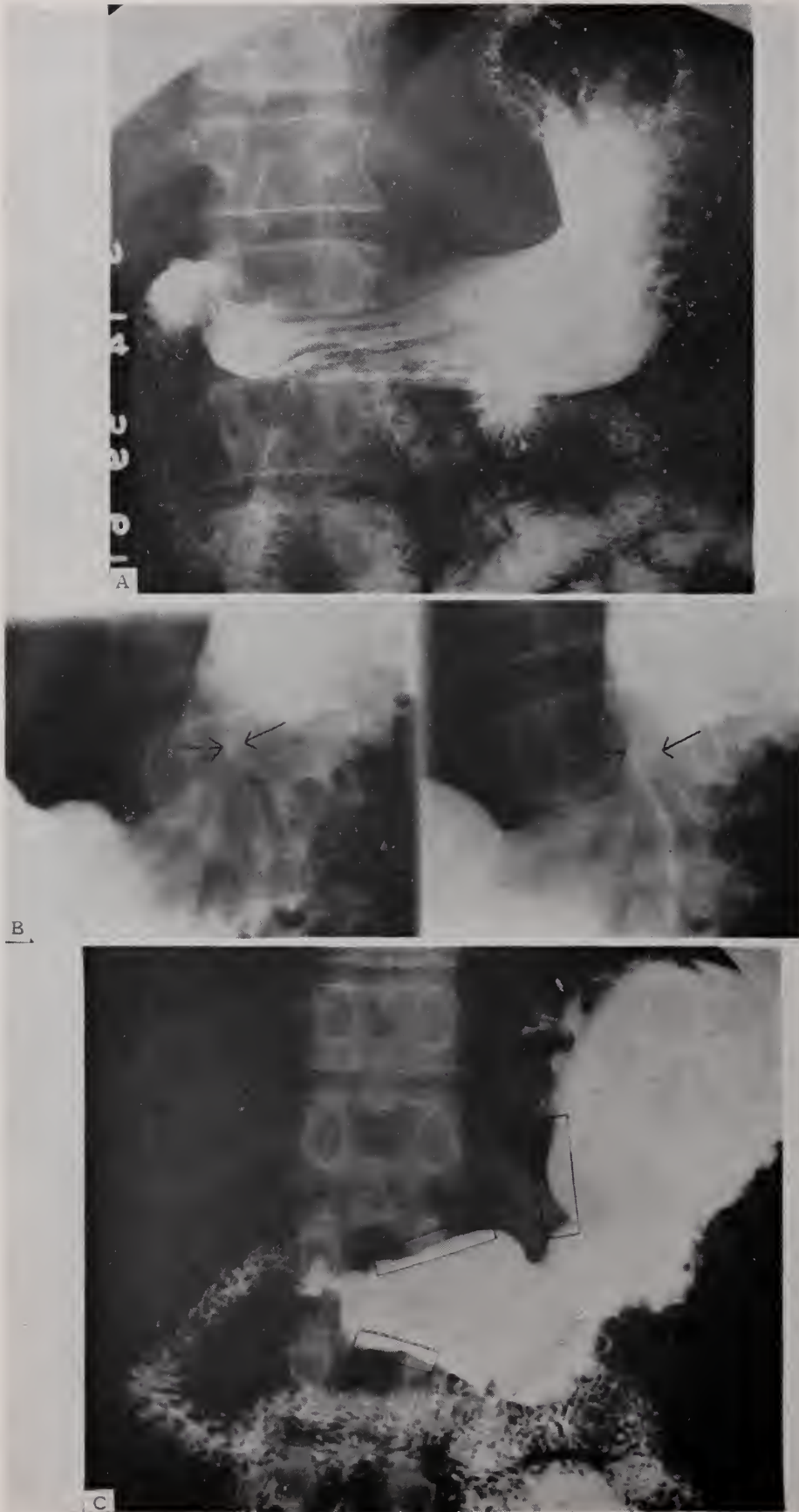


Fig. 14. Indirect signs in the stomach of peptic disease; A: granularity to the mucosa of pars media; coarse notching of contour of proximal greater curvature, a function not of the mucosa but of activity of oblique musculature; B: same patient, small ulcer in pars media; had the ulcer been a little smaller with less well defined radial pattern, the indirect signs would have been the sole abnormalities. C: another patient with deformed bulb; note the fine serration along the curvatures; is this the profile equivalent of the *en face* demonstration of granularity in A?

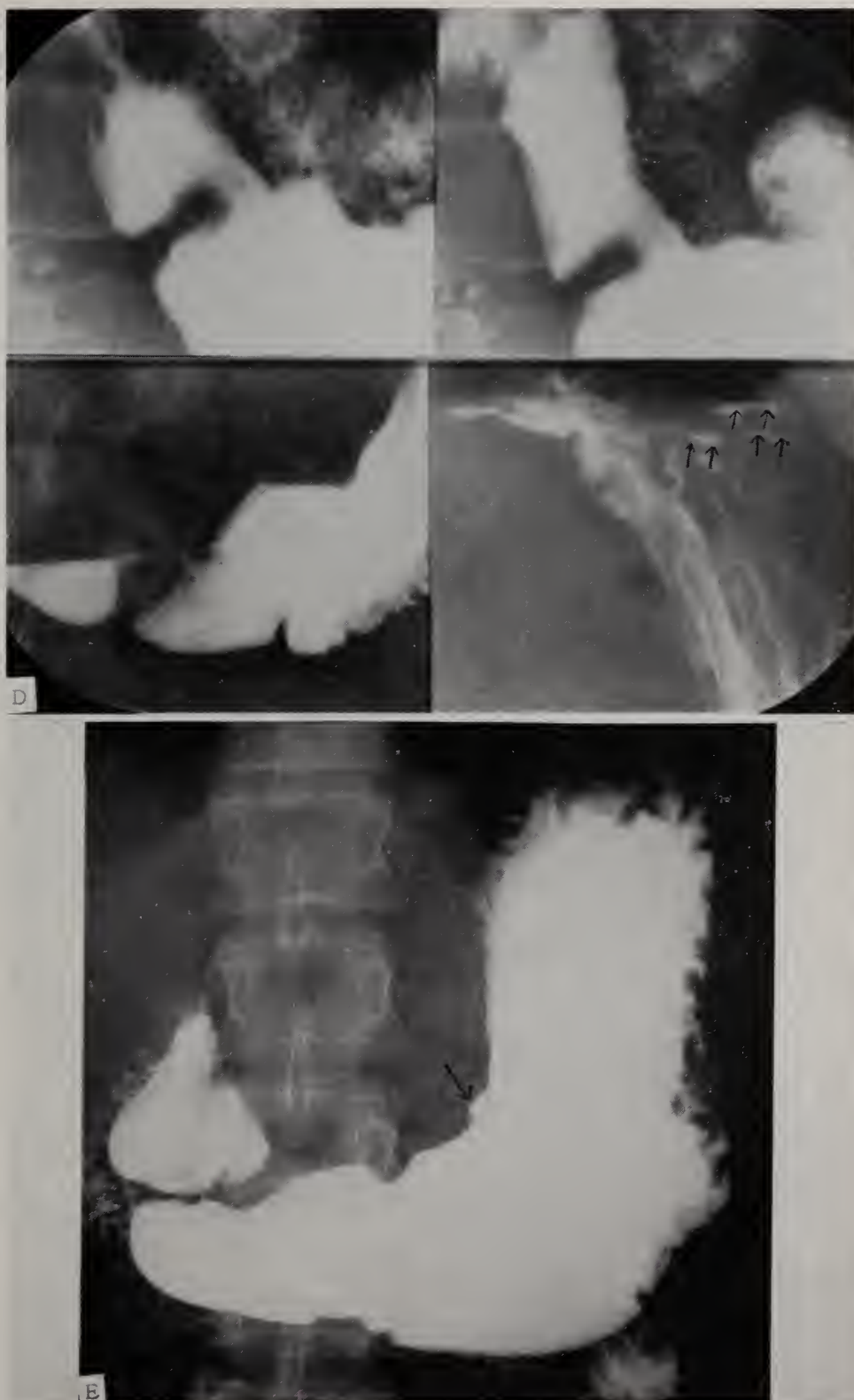


Fig. 14. D: another patient with deformed pylorus; note multiple small fluid levels in fundus.
E: another patient with gastric ulcer; note contraction of vertical portion of stomach.²⁷

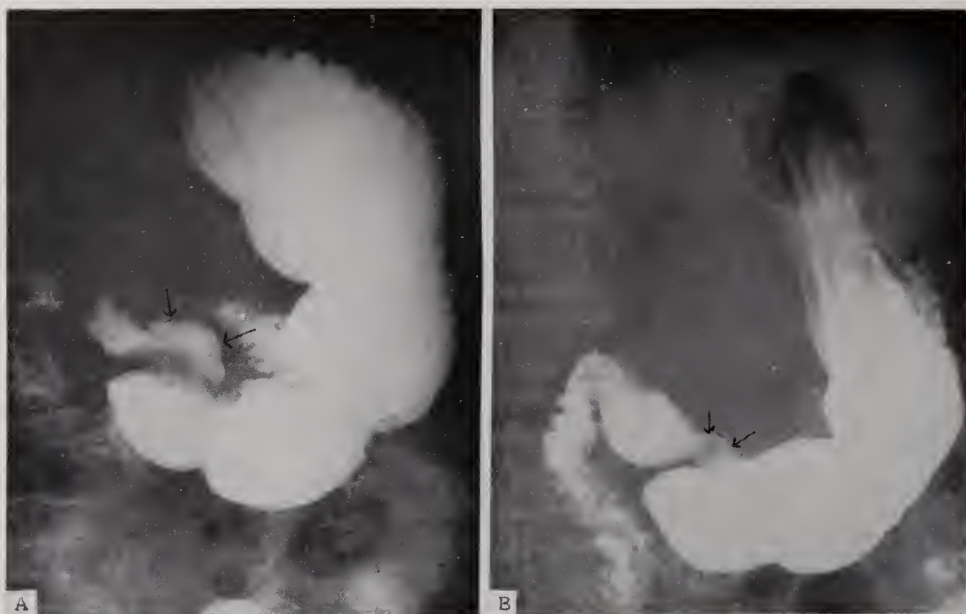


Fig. 15. Size of ulcer can be confusing; A: abnormal lesser curvature of antro-pyloro-bulbar segment; B: post-ulcer regimen examination shows that region between arrows in A must have been massive ring ulcer.

Note: Thanks are due Dr. R. G. Lester, Chairman of the Department of Radiology, Medical College of Virginia, for his help in making the final choice of the roentgenograms to be used for this paper.

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Not So "Silent Spring"

Rachel Carson is a biologist of considerable stature. She has been a member of the zoological staff of the Marine Biological Laboratory at Woods Hole, has been employed by the Federal Bureau of Fisheries, and was for three years editor-in-chief of *Fish and Wildlife Science* magazine. Besides her master's degree from Johns Hopkins, she holds no less than four honorary doctorates, one in science and three in letters. Her qualifications as a biologist, and more specifically as an ecologist, and her skill as a writer are unquestioned. But there is some serious doubt whether she is well advised to exert her no mean talents to sow feelings of terror in the medical field, where her qualifications are somewhat more in doubt—Editorial in *Rhode Island Medical Journal*, Oct. 1962.

Office Treatment of the Depressed

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Most depressions respond well to treatment which can be given in the office of the physician in general practice.

"I FEEL DOWN IN THE DUMPS and cannot shake it off," is a complaint frequently voiced by men and women coming to seek help from the general practitioner. However, there are a number of other symptoms indicating the onset of a depressive state, which, if properly recognized, make prompt and successful treatment of the condition easier.

Depression is considered an emotional state which is not warranted by the patient's physical condition, his environment, or his general life situation.

One of the most frequent prodromal or concomitant symptoms is a sudden change in the patient's outlook on life, his attitude toward work, and to those around him in general.

Frequently members of the patient's family will state that the patient "suddenly became different" from his usual self. They, or the patient himself, complain about the lack of initiative, of inability to concentrate, of sudden carelessness in the patient's personal appearance, and other similar changes. The patient frequently describes how he is unable to feel any emotional response, that he cannot cry, and how his mind appears "as a blank," is deprived by any thoughts. As-

sociated with this complaint is often the impression of being worthless, of self-reproach, of feelings of guilt.

On occasion, patients do not complain about feeling blue or downhearted, but visit the physician because of more or less severe precordial pain, palpitations, lack of appetite frequently associated with loss of weight. If physical examination does not reveal any pathological findings, one has to consider the possibility of a psychiatric condition.

At times, such patients also complain about a variety of sleep disturbances which sometimes are actually the first symptoms of an oncoming depressive attack. There is often difficulty in getting to sleep, which after a few weeks may subside. The patient then relates that he no longer has difficulty in falling asleep, but that he sleeps superficially and his sleep is repeatedly interrupted; that he awakens at an unusually early hour 3 or 4 o'clock in the morning and, although being sleepy and tired, cannot fall asleep again. Because of the superficial sleep, and the early awakening, he feels exhausted in the morning, has the impression of not having slept at all, and gradually falls into the habit of staying in bed until mid-morning, and eventually refusing to get out of bed altogether.

Another frequent complaint is constipation together with coated tongue, dryness of mouth. These patients look tired, pale, and aged.

In other cases depressive manifestations are associated with more or less marked anxiety and these, particularly in the involuntal and senile age groups, are associated with restlessness, agitation, and sometimes persecutory trends. They are the patients who are found to be complaining of

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being "surrounded by thieves, by enemies," who claim that all kinds of people want to harm them in one way or another.

The psychiatrist when encountering the symptoms of depression, differentiates between a variety of mental conditions in which such emotional states play a more or less pronounced part.

In accordance with psychiatric classification, we talk about "Reactive Depression" which was defined by Eugene Bleuler and others, as "those emotional states of sadness immediately following a painful experience, not lasting for a very long period of time, and with a depressive content essentially centered on the provoking life experience." In other words, a "reactive depression" is a state of sadness which is excessive in intensity or duration in relation to the provoking experience.

The psychiatric entity known as *Manic Depressive Psychosis* is characterized by episodic displacement of affect with alternating depressed and manic phases. Many authors agree that the depressed phases are by far more frequently encountered than the manic phases. It has been noted by various authors that each such successive attack of depression increases in duration.

The depressions occurring during the change of life period are classified as *Involucional Psychosis* and represent a distinct entity. They occur for the first time in the course of the involutional years in patients who never before suffered from overt depressive episodes. These individuals are of an overconscientious, introverted type, with a tendency to be withdrawn, lonely, readily coming into conflict with their environment because of their own oversensitivity. The depressive manifestations are associated with anxiety or agitation, hypochondriacal complaints, and, frequently, paranoid tendencies.

Depressive episodes known as *Senile Depressions* are not infrequently encountered in the aged. While they were formerly considered as incurable, we now know that these conditions can be successfully treated.

Aside from the here described psychiatric

disorders, depressions occur frequently in *Schizophrenic patients* as one of the various psychotic manifestations. Recently the general practitioner has encountered patients (Schizophrenics) who, after more or less prolonged hospital residence, have returned to the community and are maintained there on tranquilizing drugs. These persons show at times symptoms of depression as a side effect of this medication. Such depressive symptoms should be treated appropriately as soon as noted. It is best to either reduce the amount of the phenothiazines given or, better even, to add to them during the day an adequate amount of an antidepressant drug, for instance, Parnate or Tofranil (25-75 mg. daily).

Depressions are also encountered as the first and sometimes predominant symptom of a *Post-Partum Psychosis*, and the general practitioner should be alert to detect such symptoms and treat them appropriately.

In general, the private practitioner is less concerned with the psychiatric classification of any depressive condition, but wants to know: (1) whether these symptoms can be treated, (2) how to treat them, and (3) about any involved risks in such therapeutic undertaking.

1. First of all, it can be stated that most depressions generally respond well to treatment, in particular, when treated at an early stage.
2. Treatment of depressions, until a few years ago, consisted mainly of Electric Shock Therapy, to which these conditions generally responded quickly and favorably regardless of the patient's age. In most cases between 6 to 10 Electric Shock treatments were sufficient for the control of a depression. Occasionally, particularly in cases of Involutional Psychosis, or in the onset of a depressive attack representing one more episode in a series of previous depressions, up to 20 Electric Shock treatments, and even more, were required for control of symptoms. In addition to Electric Shock therapy,

the general regime concerned itself with keeping the patient relaxed and with providing for proper sleep during the night. If there was loss of weight, subcoma insulin helped to stimulate the appetite. However, very few, if any, general practitioners ventured out on a course of ambulatory shock treatment. This was mainly reserved for in-hospital treatment, or for office treatment by the psychiatrist.

In recent years tranquilizing drugs have been more and more in use, effectively controlling agitation and in lowering the total level of energy, leading to general sedation. However, they did not affect the basic depression of mood, and occasionally even tended to further depress the mood.

During the past few years antidepressant drugs, sometimes also called psychic energizing drugs, like Iproniazid and its derivatives, Tofranil, Parnate and others, have been made available for treatment of depressions and have shown their effectiveness in numerous cases reported by various authors. While the use of Iproniazid has been reported to occasionally cause severe drop of blood pressure, and various authors also reported cases of more or less severe liver damage in connection with the use of this compound, Tofranil has been reported to be well-tolerated by most patients.

In general, dosages of 25 to 50 mg. of Tofranil, 3 to 4 times daily, have been found to control depressive symptoms in many cases within a few weeks. In the presence of anxiety, the additional use of one of the phenothiazine derivatives: chlorpromazine, compazine, vesprin, and others, particularly at night, has been quite useful. To improve appetite and to induce gain in weight, a few units of insulin or of

thiamin chloride have shown good results.

All excessive demands on the effect and intellect of the patient are to be carefully avoided. Persons in the patient's environment are to be advised that the depressed person is by no means to be admonished to overcome fatigue by efforts of will, and that any such attempt would only lead to deepening of the depression caused by the patient's fear of failure. To send such patients away on a holiday is not only a waste of time, but might tend to deepen the anxiety and depression.

When starting the treatment of a depression, patients should be seen by the physician frequently, at least twice weekly, to control the action of the prescribed medication and to facilitate establishing a good doctor-patient relationship and, last but not least, to control the course of the condition. These frequent visits can be reduced as soon as the very acute depressive symptoms have subsided, the patient begins to eat better, to show some gain in weight, and to sleep better.

Particular care must be taken to prevent patients who have shown some improvement from returning to work too soon, as their tendency to become overtired might lead to worsening of the condition. Therapy with antidepressant drugs should be continued in reduced dosages (for instance, 25 to 75 mg. Tofranil daily) for several weeks after control of depression has been brought about. Return to work should be, as far as possible, gradual and, if at all possible, first on a part-time basis.

It is advisable to remember that Tofranil given late in the day might possibly interfere with proper sleep, and should, therefore, be avoided at an hour close to bedtime. Where there is

a persistent sleep disturbance, a bedtime dose of one of the phenothiazines has been found to help in providing relaxed sleep, and thus a better and refreshed start for the patient on the following morning.

In addition to drug therapy, the physician should try to discuss with the patient, as well as with those in the patient's environment, any possible underlying problems, any existing difficulties and adversities. Attempts should be made to keep the patient, who has difficulties in his interpersonal relationships, has any work problems, under close supervision until he gains a better attitude and better understanding of the existing situation. It should also be attempted to interest the patient in leisure time activities and to point out to him the importance of a proper regimen of work and play.

3. Aside from the already mentioned physical side-effects of some antidepressant drugs, the greatest risk in the treatment of depressions is the risk of suicide, which should always be kept in mind. This is important, because the physician will have to decide whether treatment can be carried out on an ambulatory basis or whether hospitalization is required. The evaluation of the danger of suicide has to be made by taking into consideration whether there is a family history of suicide, whether the patient has ever before attempted or threatened to attempt suicide. It is further important to investigate whether the patient has some definite ideas as to how he would go about committing suicide. It is, moreover, important to carefully investigate by talking to the patient and

his relatives, whether there is an increase in anxiety, whether the sense of loneliness and isolation tends to become overwhelming. Lack of religious ties or any higher values have to be taken into consideration, as these tend to increase the danger of suicide.

Overwhelming financial problems and severe prolonged physical illness are other factors to be taken into account. A good patient-doctor relationship will help to reduce the risk of suicide. However, when the danger of suicide appears to be present, the quickly acting electric shock treatment, either on an ambulatory basis, or intra-murally, should be resorted to, if the risk of suicide is to be avoided.

Modern attitude toward the treatment of psychiatric conditions, stressing community treatment whenever possible, rather than hospitalization which, as has been pointed out, has damaging effects on the patient in itself, has placed a greater burden on the general practitioner. As there are, particularly in some areas, not enough psychiatrists available, many physicians in general practice are called upon to treat patients suffering from a variety of symptoms, formerly not always recognized as mental conditions. This extra burden, however, can become a very gratifying task. But, it has to be stressed, the practitioner will have to carefully evaluate each individual case and decide which patient can be treated on an ambulatory basis and in which other cases the danger of suicide, and, therefore, the risk of such ambulatory treatment is too great and hospitalization, or at least quick acting ambulatory electric shock therapy, has to be resorted to.

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The Role of the Director of Medical Education in Graduate Medical Education in a Community Hospital

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Certain prerequisites of hospital facilities and personnel must be met in order to develop a good teaching program. The director of medical education has an indispensable role.

THE PROBLEM of medical education in the community hospital is a great one. None can doubt that a properly organized program in such hospitals has great merit both from the standpoint of the house officer, the attending man, and the patient. This type of hospital is the location of the greatest assemblage of patients involved in the practice of private medicine in this country. Yet, these hospitals, in general, are faced with little organization of such programs, lack of money for support of qualified personnel and a situation in which there are at least two openings for every possible house officer candidate. There are, as you know, about 13,000 approved internship positions and about 7,000 United States medical graduates each year. It stands to reason that programs in such hospitals can only survive if certain prerequisites of hospital organization and personnel are present. It is in this dilemma that the position of a Director of Medical Education has evolved.

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The Director of Medical Education in a Community Hospital has a multifaceted position with his primary mission to stimulate a spirit of inquiry and improvement of medical knowledge among house staff and attending staff alike. This involves much work at the grass roots level and, of course, from the beginning, needs the cooperation of at least a small group of attending physicians from all services and the administration as well.

Organization of a teaching program in each of the major services is of utmost importance and must be carried out by the Directors of each service. The Director of Medical Education must guide and direct this work but must be careful not to usurp the position of these chiefs. This is certainly not apt to happen except in the specialty which the Director of Medical Education has himself pursued.

A word about the qualifications of the Director of Medical Education seems to be in order. He certainly cannot accomplish this work himself but certain prerequisites appear to be of greatest importance. He should be a man with primary interests in clinical medicine and teaching for it is clinical medicine which is the stronghold of the community hospital. This does not exclude research as a function of the community hospital but this will prevail to a lesser extent in such a hospital. He should be a man who is going to identify himself primarily as a physician in the eyes of the staff rather than an administrator because, after all, it is the staff that is either going to make or break the program. It would appear that the man trained and certified

in internal medicine, preferably with some teaching background, would be best suited for the position because this field is so large and enters into other specialties of medicine so frequently. It would seem wise that the man not be fresh from his training and hence too junior in professional stature and that he not be too old and considering the position as one for retirement. In either of these cases, respect from the staff may be lacking and his ineffectiveness may doom the program to failure. If he has special training in a subspecialty of medicine, possibly lacking in the medical community, so much the better, for he can also be a useful physician in his own right and this may lend itself to consultation without conflicting interests. It goes without saying that this position can best be pursued in a full-time manner with referred consultation work as a means of intellectual stimulation for himself and not as a primary source of income. However, this aspect of his work has great importance if he is to remain interested and competent while pursuing his medical education career.

In my own opinion, it is important for the community hospital to have certain prerequisites if it can hope for a high class, self-perpetuating program that will attract the well-informed house officer of today. Needless to say, the men interested in training in a community hospital have made this decision after much deliberation if we realize that such hospitals are seldom recommended by their peers of the medical school and, in many cases, deservedly so. The potential house officer of today is so knowledgeable about what is good and bad in hospital training that it should make most of us wonder what we did know about it when we faced a similar decision concerning internship or residency 15-20 years ago. The answer is that we knew very little and the proof is around us everywhere when we see hospitals which once enjoyed the presence of house officers and now beg and bargain for anyone with an M.D. that they can get; and many get none at all.

It is my feeling that a hospital must have at least 200 beds and a clinic service of at least 20% of admissions in order to provide the variety of pathology necessary for adequate teaching. The 20% clinic beds will be the major nucleus of patients around which the teaching will center. The advantage of clinic patients in teaching is obvious both from the standpoint of adequate responsibility and the fact that the clinic service lends itself to complete and effective organization. The importance of responsibility with proper supervision is great and can never be equaled by the house officer in private patient care. This is especially true in the case of surgery where the attending physician cannot justly relinquish his responsibility to the house officer in the operating room. The hospital must have a full time pathologist and radiologist for these men are the backbone of the teaching program. It is our opinion that house officers should no longer routinely work up all private patients for this chore provides little learning for the effort and time expended. In fact, all duties which can be effectively carried out by technicians or nurses, should be delegated to these people in order to free the house officer for assignments needing his special knowledge and skills.

The best qualified members of the staff, who often are the specialists who have been in practice from 5 to 20 years, should prove to be the principal teachers. They must be willing to give time and effort at considerable personal and financial sacrifice in order to make the program work. A faculty committee should meet at least once a month to discuss problems relating to the program and to allow the Director of Medical Education an opportunity to acquaint them with the progress, dilemmas, and prevailing attitudes of the house staff. Communication is of the essence in gaining full cooperation of all participants and contributions to the teaching program.

Rewards to the staff in the early days of the program are not very tangible except

that the academic atmosphere established makes the hospital, from the beginning, a more interesting place in which to work. Of course, the emergency room coverage by the house staff under supervision is a tremendous service to the community and its practicing physicians. Response to emergencies among the private patients by the house staff is a constant source of satisfaction and reassurance to the attending staff. As time goes on and the programs improve, it may be possible to incorporate the patients of the participating physician-teachers as an adjunct to the regular clinic teaching service. In the final analysis, the real reward to the attending physician is his knowledge that better medical care is now reaching all patients.

Rapport must be developed with the administration and board of trustees. There will be points of disagreement between the staff, administration and board of trustees but joint conferences at least four times a year between all three will help greatly to remove any misunderstandings. The Director of Medical Education has an important liaison position between these groups and should be present at all meetings which might, in any way, involve the house staff or the teaching program. This would include the executive committee in which, it is my personal opinion, he should be a member without vote. His principal contribution will be in the realm of accurate and

up-to-date information concerning many facets of the hospital operation.

It is of utmost importance that a visiting professor program be established as a source of outside stimulus and teaching. Many of these professors may come from schools supplying graduates or potential house officers. If the hospital really has a good program, this is a golden opportunity to acquaint the professor with first-hand observation and, in the future, he will be in a better position to advise the fourth year student who places much weight on his teacher's appraisal and recommendation of an internship.

It is my feeling that certain prerequisites of hospital facilities and personnel must be met in order to allow a good teaching program to grow and perpetuate itself. These prerequisites have been described in the earlier part of this paper. It seems to me that hospitals which do not have these prerequisites could better handle their service requirements through the establishment of dignified salaried positions. This would obviate the need for acceptance of house physicians into a program which, from the beginning, could not hope to provide the type of educational experience which is expected and demanded by today's house officers during internship and specialty training.

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Migraine Headaches

Migraine headaches occur 2-3 times more frequently among women than men. Symptoms result from constriction and subsequent dilatation of certain arteries in the head. "Persons subject to migraine are described as intense, driving, perfectionistic, and compulsive. They tend to be overly

conscientious and meticulous and have difficulty in expressing their aggressive feelings. . . . Heredity has been found to be a factor in more than 60% of cases," according to *Patterns of Disease*, a Parke, Davis & Company publication for physicians.

Diagnostic Triad

Importance in Diagnosis of Pulmonary Malignancy

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Various procedures are evaluated as aids in the diagnosis of pulmonary malignancy.

THE USE of the diagnostic triad, bronchoscopy, pre-scalene node biopsy, and sputum cytology studies have an acknowledged position in the diagnosis of lung disease. It is the purpose of this study to determine the objective role of these diagnostic procedures in the early diagnosis of pulmonary malignancy. Fifty-six patients were examined in this fashion, all of whom subsequently underwent thoracotomy for tissue diagnosis.

It has become evident during the past ten years that cytology studies have an important role in the early diagnosis of malignancy in all regions of the body. In the bronchial tree, the type of neoplasm, and its location in the primary or secondary bronchi or in the lung parenchyma itself, determines to a great extent the success of cytological study. Therefore, alveolar cell tumors with copious mucoid sputum production revealed a highly positive cytology. These alveolar or bronchiolar lesions with scant sputum are low on the scale of positive cytologies. Large proximal epidermoid tumors without ulceration or break down in the tumor surface have poor cytology results, but highly positive bronchial biopsy yields. Those epidermoid lesions or anaplastic growths that were small but ulcerated revealed both highly positive cytology and bronchial biopsy results. The more peripheral lesions—espe-

cially adenocarcinomas without ulceration or bronchial erosion yield poor cytological, pre-scalene, and bronchial biopsy results. The pre-scalene fat pad study reveals that the most positive results depend upon palpable nodes, except in anaplastic or undifferentiated lesions. In the latter, the pre-scalene results are positive, often without externally palpable nodes.

Indications

Any patient with an undiagnosed pulmonary lesion, except, of course, those with obvious pyogenic infections or benign granulomas, was subjected to bronchoscopy with saline washings and pre-scalene node biopsy. The patient with a "coin lesion" or suspicious but well localized peripheral lesion without calcium or laminations was subjected to direct thoracotomy, and not included in this study. It is the feeling of the author that both bronchoscopy and pre-scalene node biopsy can be safely performed simultaneously with local anesthesia. There were no post-operative deaths and no complications. To perform these procedures on different occasions seems an unnecessary expense and prolongation of hospitalization.

Technique of Bronchoscopy

Following the pre-scalene biopsy, bronchoscopy is performed under local anesthesia. A nebulizer spray of 0.5% pontocaine is used to anesthetize the pharynx, with 1% pontocaine is used with a curved cannulated needle to anesthetize the vocal cords and trachea. A bronchoscopic examination is then performed with care to visualize the entire right and left main stem bronchi and all segmental orifices. Saline washings are

taken through the bronchoscope and collected in a test tube for cytology examination. If a bronchial lesion is visualized, biopsy is taken and sent to pathology. The routine use of the right angle prism bronchoscope for visualization of the left upper and right upper lobe should be performed when these areas are suspected, since a small endobronchial tumor may thus be visualized which would ordinarily be missed.

Technique of Pre-scalene Node Biopsy

The right pre-scalene node fat pad receives the lymphatic drainage of the entire right lung and the left lower lobe. The left upper lobe drains to the left pre-scalene nodes. Therefore, most biopsies were performed on the right side. After local infiltration with novocain, a two inch incision is made just lateral to the sternocleidomastoid muscle and the platysma divided. The omohyoid muscle is retracted and this exposes the fat pad. Occasionally, the transverse cervical artery is encountered and must be sacrificed. Care is taken to avoid injury to the pad, and the external jugular vein is protected by medial retraction. The fat pad with contained nodes is lifted from its bed, and the anterior scalene muscle identified and the phrenic nerve visualized and preserved. A finger can then be inserted gently into the paratracheal region to palpate the superior thoracic nodes. The fat pad is then removed and the incision closed.

Results

Scalene fat pad biopsy was performed at the time of bronchoscopy in fifty-six patients, who subsequently underwent thoracotomy. A combined pre-scalene node biopsy and bronchoscopy was performed on an additional fourteen patients for a variety of reasons—mostly to establish the diagnosis of sarcoidosis or to rule out fungus infection. Of the fifty-six patients undergoing this study, all were suspected cases of bronchogenic carcinoma. The average age was fifty-eight years, with a male to female ratio of

six to one. The pre-scalene node biopsy results show that of those patients who had non-palpable pre-scalene nodes (28), eight had positive nodes, and of those patients who had palpable pre-scalene nodes (18), seventeen had positive nodes.

Positive bronchoscopic biopsies were obtained in seventeen patients of the thirty-eight who had bronchogenic, epidermoid or anaplastic tumors. Only three positive bronchial biopsies were obtained in the twelve patients with alveolar or bronchiolar carcinoma. Of the remaining group of six patients with peripheral adenocarcinomas there were no bronchial biopsies since no lesions were visualized, and therefore no positive results.

Sputum Cytology

Positive cytologies were obtained in eight patients of the thirty-eight with proximal bronchogenic or anaplastic lesions. Seven of the twelve patients with alveolar cell tumors had positive cytology demonstrating the higher incidence found in this mucous producing lesion. None of the adenocarcinomas had positive cytology results.

THE FOLLOWING TABLE ILLUSTRATES THE RESULTS OF CYTOLOGY, BRONCHIAL BIOPSY AND PRE-SCALENE BIOPSY OF FIFTY-SIX PATIENTS WITH PROVEN PULMONARY MALIGNANCY.

FIGURE 1

	Total No. Patients	Positive Pre-scalene Biopsy	Positive Bronchial Biopsy	Positive Cytology
Epidermoid Carcinoma	17	6	11	5
Anaplastic Carcinoma	21	19	6	3
Alveolar Carcinoma	12	0	3	7
Adenocarcinoma	6	0	0	0

FIGURE 2

	Palpable Pre-scalene Nodes With Positive Node Biopsy	Non-Palpable Nodes With Positive Biopsy
Epidermoid Carcinoma	11	3
Anaplastic Carcinoma	6	5
Alveolar Carcinoma	1	0
Adenocarcinoma	0	0

Discussion

The use of the diagnostic triad of bronchoscopy, cytology, and pre-scalene node biopsy are of proven benefit in evaluation of the suspected bronchogenic carcinoma patient. The finding of positive pre-scalene

nodes indicates extension via the paratracheal lymphatic chain, and is of prognostic significance, in that, curative resection can not be performed. In many cases, thoracotomy is contraindicated by evidence of distant metastasis or further evidence of intrathoracic extension which obviates the possibility of curative surgery. However, patients do not die from pre-scalene metastasis—rather from more distant vital organ involvement or direct intrathoracic extension. Therefore, in selected cases—even those with positive pre-scalene nodes, but without extensive hilar involvement, recurrent or phrenic nerve paralysis or pleural effusion—palliative resection is possible. These cases are rare, indeed, and most patients having positive nodes should not be subjected to thoracotomy. However, the complications of a tumor break down with abscess formation, bleeding, and chronic infection from bronchial obstruction can be by-passed in selected patients by palliative resection. On the other hand, the finding of negative pre-scalene fat pad suggests the possibility of a curative resection. This procedure, then, is helpful to the physician in his patient care and prognostic considerations.

We feel, therefore, that all patients with suspected bronchogenic carcinoma should be subjected to bronchoscopy and pre-scalene fat pad study, since these can be performed easily under local anesthesia, simultaneously, and afford the physician the opportunity to better evaluate the patient.

Summary

1. Pre-scalene fat pad biopsy in conjunction with bronchoscopy, bronchial biopsy, and bronchial washings for cytology studies were performed on fifty-six patients with proven bronchogenic carcinoma. Fourteen other patients were subjected to bronchoscopy and cytology studies, as well as, pre-

scalene fat pad biopsy for a variety of other pulmonary conditions, mostly sarcoidosis.

2. The finding of positive pre-scalene nodes in a patient suggests inoperability or that a curative resection cannot be performed. However, there are selected patients in whom a palliative resection can be performed despite the poor prognostic significance of pre-scalene lymphatic extension. In general however, it is felt that a positive pre-scalene fat pad when combined with other evidence of inoperability, such as, hilar extension, pleural effusions, or recurrent or phrenic nerve involvement contraindicates thoracotomy.

3. The procedures of bronchoscopy with saline washings and pre-scalene node biopsy can be performed safely and simultaneously under local anesthesia, giving the physician great information about the patient, the prognostic possibilities, and an accurate diagnosis of the tumor type in many cases.

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Phocomelia

A Case Report without Thalidomide Ingestion

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A case of this congenital anomaly which could be diagnosed in-utero by x-ray is presented.

IN THE PAST YEAR or so much attention has been directed in the medical and lay literature to "The Thalidomide (a sleeping pill developed by the West German firm Chemie Grünenthal) Syndrome" causing phocomelia (Greek: phoke, meaning seal; melos, meaning limb) of the fetus during the third to sixth week of pregnancy (when most women don't even realize they are pregnant) as a result of the pregnant woman taking these pills. The reader is referred to the literature for more comprehensive and provocative reports on this problem.

Prior to the thalidomide syndrome, phocomelia was considered so rare a syndrome "that most physicians never see it in a life time" (Taussig). In view of this, it is of interest to report a case of phocomelia in which careful interrogation of the primipara mother, who is a 23 year old white practicing registered nurse, by the attending physician as well as others, failed to produce any evidence of thalidomide ingestion or any other congenital anomaly inducing agent (i.e. German measles, irradiation, etc.). Admittedly we cannot eliminate the possibility of thalidomide ingestion with absolute certainty particularly in view of the occurrence of such a rare entity in the aura of "The Thalidomide Syndrome" but we present this case with this reservation.

Figure 1 is an x-ray pelvimetry film taken four days prior to delivery and one can note

the striking deficiency of the extremities of what otherwise appears to be a normal term fetus with the breech presenting. Caesarian



Fig. 1

section was uneventful and P. E., Figure 2, as well as a postpartum x-ray film of the infant, Figure 3, revealed phocomelia with involvement of all four extremities.

It may be appropriate to repeat Taussig's admonition in the Scientific American: "If thalidomide had been developed in this country, I am convinced that it would easily have found wide distribution before its terrible power to cause deformity had become apparent. The marketing techniques of the

pharmaceutical industry which can saturate the country with a new drug, almost as soon as it leaves the laboratory, would have en-



Fig. 2

abled thalidomide to produce thousands of deformed infants in the United States. I believe that it is essential to improve both the techniques for testing and the legal controls over the release of new drugs.”

Summary

A case of a phocomelic infant is presented which could be diagnosed in-utero by x-ray pelvimetry and in which no history of congenital anomaly inducing agent (esp. thalidomide) could be elicited.

Acknowledgement is extended to Dr. J. L. Clare and Dr. J. D. Beale, Jr., who were the attending physicians in this case.

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Fig. 3

June 30, 1962.

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Diagnostic Laboratory Medicine

Serum Acid Phosphatase

Serum acid phosphatase determinations are of value in the diagnosis of disseminated prostatic carcinoma, in the evaluation of the success of therapy on the course of the disease and in determining the recurrence of the malignancy.

Most authors agree that the level of this enzyme is not elevated when the cancer is limited to the prostate gland and that in about a quarter of untreated cases with disseminated carcinoma, the level of this enzyme is normal. With previously elevated levels there is usually a fall three to four days after surgical castration and two weeks after estrogen therapy. It remains low as long as the remission continues.

There has been some controversy concerning the value of the so-called prostatic or specific acid phosphatase as opposed to the total acid phosphatase. Besides the prostate other sources of serum acid phosphatase include the erythrocytes, the platelets and possibly other organs such as the liver and kidney. The non-prostatic type can be inhibited by L-tartrate or by using particular substrates. B-glycerophosphate (Bodansky method) and phenylphosphate (King-Armstrong) have some selectivity for the prostatic acid phosphatase. Beta-naphthylphosphate is still more specific. This latter substrate will soon be substituted in our

laboratory for the present substrate which is non-specific for the prostatic fraction but useful in measuring the total acid phosphatase (p-nitrophenyl-phosphate method—Bessey-Lowry).

Total acid phosphatase is increased in Gaucher's disease, myeloproliferative diseases, Paget's disease, metastatic disease to bone and multiple myeloma. When the alkaline phosphatase activity is raised this may represent in part some residual activity of this enzyme at an acid pH. It is raised considerably in hemolyzed serum due to the release of erythrocyte acid phosphatase. The use of the new substrate will make the test more specific for prostatic disease and reduce false positive results.

Perhaps the greatest source of error in phosphatase determinations concerns the stability of the enzyme. After two hours at 37°C. 90% of activity is lost. Therefore it is imperative, especially in the summer, to send the specimen to the laboratory in ice. The serum may be removed and frozen or 0.01 ml. of 20% acetic acid may be added to each ml. of serum as an alternative procedure. Blood sent to the laboratory in the routine manner is worthless for accurate, reproducible acid phosphatase determinations.

Serum acid phosphatase is raised for 24 hours following prostatic massage or vigorous examination.

	Values	Substrate	Normal Values
Now used	Bessey-Lowry	p-nitrophenyl phosphate	0.04-0.7 B.L. units
To be used	Phosphatabs (Warner-Chilcott)	beta-naphthyl phosphate	0.09-5.5 units

EUGENE KAGAN, M.D.

MACK I. SHANHOLTZ, M.D.

State Health Commissioner of Virginia

Immunization for International Travel

As the height of the travel season approaches, Virginians who plan to travel abroad must begin now the proper series of vaccinations and immunizations required or recommended for the area which they will visit. Because of the excellent medical care available in the United States, most of our citizens give little thought to such diseases as smallpox, typhoid, cholera, etc., and it comes as quite a shock to them to read of outbreaks in other areas of the world, particularly in Europe where many thousands of Americans travel each year. During 1961 smallpox was introduced into Europe nine times; recently, typhoid fever broke out in epidemic form in the tourist town of Zermatt, Switzerland. Travelers who pick up diseases which have been eradicated in our own country endanger not only their own health but, on returning home, the health of their fellow citizens. They should, therefore, take every precaution to prevent such an occurrence.

Through the World Health Organization, all member countries cooperate in exchanging and reporting disease conditions of their respective countries, and sanitary rules for international traffic and travel are standardized through agreement between governments. All local health departments in Virginia have such information and will be able to provide travelers and/or their physicians with specific details.

Following is a brief general outline of the major immunizations required or recommended.

REQUIRED:

1. *Smallpox*: A smallpox vaccination is required for all travel outside of the United States. This vaccination is valid for a period

of three years. However, it is recommended that travelers to countries experiencing smallpox have a vaccination of less than one year's duration.

2. *Yellow Fever*: Generally speaking, a yellow fever vaccination is required for travel to Central America, the northern and central part of South America, the southern half of Africa, and Ceylon, India, and Pakistan. The yellow fever vaccination is valid for six years; it may be obtained by appointment only from a designated yellow fever vaccination center. In Virginia these centers are located at the health departments of Richmond, Norfolk, and Lynchburg. Residents of Northern Virginia may use the U.S. Public Health Service Outpatient Clinic in Washington, D. C. Standard course: 1 inoculation.

3. *Cholera*: In recent years cholera has been confined to Burma, India, Nepal, and Pakistan. However, it has reappeared in Hong Kong, Thailand, Afghanistan, the Philippines, Northern Borneo, Indonesia, and Taiwan. Travelers to these areas must be immunized against this disease. The cholera vaccination certificate is valid for a period of 6 months. Standard course: 2 inoculations, 7- to 10-day interval. A booster dose should be obtained at 4- to 6-month intervals as long as danger of infection exists. The standard course need not be repeated at any time.

RECOMMENDED:

1. *Typhoid, Paratyphoid, Tetanus, Polio*: The U. S. Public Health Service recommends that all travelers be immunized against typhoid and paratyphoid, tetanus, and polio. The importance of typhoid is particularly emphasized in view of the recent outbreak in Europe. Standard courses are as follows. Typhoid and Paratyphoid:

3 injections at 7- to 28-day intervals; a booster dose annually while in an infected area; the complete series need not be repeated at any time. Tetanus: Two to three doses at intervals of 3 to 6 weeks, depending on the type of toxoids used, and another dose 12 months after the first dose; booster doses should be given at 4-year intervals thereafter, and at the time of injury (use dosage on the label). Polio: Using Salk vaccine, 4 injections; the first two 4 to 6 weeks apart, the third 7 to 12 months after the second injection, the fourth 1 year after the third injection; a booster (5th injection) may be given 1 year after the basic series has been completed.

2. *Typhus*: Inoculations against typhus are recommended for persons going to infected areas when they expect to be outside of the usual tourist areas and in places where living conditions are poor. Louseborne typhus exists in Asia, Africa, the Eastern European countries, Mexico, and the Andean region of South America. Standard course for louseborne typhus: two inoculations, 7- to 10-day intervals. A further dose is recommended annually for persons staying in an infected area. The complete series need not be repeated at any time.

3. *Influenza*: This immunization is recommended on the advice of the private physician.

All of the above immunizations except yellow fever may be obtained from the traveler's private physician. The date of the inoculation and the signature and place of residence of the administering physician must be recorded on an official *International Certificate of Vaccination*, which, in turn, must be certified by the local health department of the area in which the physician practices. Each local health department in Virginia has the proper stamp for certification. *International Certificates of Vaccination* are usually supplied by the travel agent who books the travel; they may be secured also from the court to which application for a passport is made.

Every vaccine except yellow fever can be obtained from local pharmacies. If they are not available locally, they may be obtained at cost from the Bureau of Biologics and Drugs of the State Health Department.

The observance of the rules for immunization for international travel will avoid serious difficulties and delays in travel. It will also insure the traveler a healthy as well as happy holiday.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE
DISEASE CONTROL

	Mar. 1963	Mar. 1962	Jan.- Mar. 1963	Jan.- Mar. 1962
Brucellosis	0	0	0	1
Diphtheria	0	2	1	4
Hepatitis	69	166	331	499
Measles	1812	2149	2815	4815
Meningococcal Infections	12	7	36	22
Aseptic Meningitis	0	1	9	5
Poliomyelitis	0	0	0	1
Rabies (In Animals)	26	19	61	44
Rocky Mt. Spotted Fever	0	1	0	2
Streptococcal Infections	1458	1341	3711	2957
Tularemia	0	2	5	4
Typhoid Fever	1	2	1	4

EDNA M. LANTZ
JAMES B. FUNKHOUSER, M.D.

Who Is Revolving the Open Door?

A few years ago there was considerable discussion about the Open Door Policy. The "Open Door" referred to the new freedom permitted to mentally ill patients who had in former years been forced to remain behind locked doors. Much of this new freedom was made possible because the new psychotropic drugs could modify the behavior of certain overactive patients. However, these new drugs had more than this effect. Not

creasing number of patients who leave the State Mental Hospitals eventually had to return. The expression "Revolving Door" or "Swinging Door" came into slang use to describe the situation.

Many studies have amply demonstrated that this return to the hospital is not necessary if the patient can find social, economic, medical and other kinds of support in the community. The Department of Mental Hygiene and Hospitals in Virginia has con-

MOVEMENT OF PATIENTS BY DIAGNOSTIC GROUPS AND FOR THE YEAR
ENDING JUNE 30, 1962 OF THE FOUR MENTAL HOSPITALS

DIAGNOSTIC GROUPS	FIRST ADMISSIONS		READMISSIONS		RESIDENT 6/30/62		RELEASES		RETURNS		DIRECT DISCHARGES	
	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
Total.....	2,700	100.00	2,354	100.00	11,536	100.00	4,918	100.00	2,936	100.00	1,973	100.00
Senile—Cerebral Arteriosclerosis.....	614	22.74	160	6.80	1,455	12.61	327	6.65	182	6.20	29	1.48
Other Acute and Chronic Brain Syndromes.....	351	13.00	228	9.70	1,710	14.82	548	11.15	319	10.88	230	11.67
Schizophrenia and Manic-Depressive.....	521	19.30	1,024	43.51	5,772	50.04	2,625	53.39	1,579	53.79	266	13.49
Other Psychotics.....	79	2.93	51	2.17	398	3.45	214	4.36	113	3.86	22	1.13
Psychoneurosis.....	158	5.85	143	6.09	136	1.18	248	5.06	126	4.30	183	9.28
Alcoholism.....	419	15.53	440	18.70	222	1.93	526	10.71	362	12.34	648	32.87
Personality Disorders.....	321	11.89	197	8.38	216	1.87	225	4.59	127	4.34	434	22.00
Mental Deficiency.....	118	4.37	74	3.15	1,553	13.46	194	3.96	125	4.26	93	4.73
No Mental Disorder and Undiagnosed.....	119	4.41	37	1.60	74	0.64	11	0.23	3	0.12	68	3.45

only was the Open Door possible but an increasing number of patients were able to leave the hospital entirely and return to the community.

But the developments were not all favorable. It soon became apparent that an in-

creasing number of patients who leave the State Mental Hospitals eventually had to return. The expression "Revolving Door" or "Swinging Door" came into slang use to describe the situation. Many studies have amply demonstrated that this return to the hospital is not necessary if the patient can find social, economic, medical and other kinds of support in the community. The Department of Mental Hygiene and Hospitals in Virginia has concentrated its attention on this problem. In order to know what category of patients were causing the return rate to remain high, the study of frequency distribution by diagnostic categories was made (see table). It can be seen that the returnees (readmissions and returns) are concentrated in one statistical category—schizophrenia and manic-depressive. On a percentage basis the other returnees do not seem significant except for the alcoholic readmissions. Although it is not shown by these tables what percentage

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Approved for publication by Commissioner, Department of Mental Hygiene & Hospitals.

are manic depressives and what percentage are schizophrenics, the manic depressive readmission was only 4% of the total of the two (43:51). Thus very few of these are manic depressive cases. The reason that manic-depressive and schizophrenics are not separately listed in this report is that these are the functional psychotics that can be

clearly separate from other types of psychoses.

This table is not surprising. It has been well known for many years that schizophrenia has been the core problem of our State Mental Institutions and is by consequence the main problem for aftercare and rehabilitation efforts.

The Chronic Cough—Shortness of Breath Campaign

"Do you have a chronic cough or shortness of breath? If you do—you may have respiratory disease. See your doctor."

These are the words which will be spoken from television screens, broadcast from radios and discussed in newspapers across the nation from May 1 to June 15. They are the central phrases in the coming campaign by tuberculosis associations to induce public consciousness of symptoms which may herald danger—symptoms that too many ignore.

This campaign will be the first nationwide effort directed toward detection of respiratory diseases—the disease groups which constitutes the greatest single recurring cause of occupational disability among the young and middle-aged.

The National Tuberculosis Association six years ago expanded its interest to include all respiratory diseases (RD) because (1) it was the logical field for projection of its interest and organizational resources, (2) physicians of the American Thoracic Society (medical arm of the NTA) have been involved with all forms of RD in practice, teaching and research, and (3) other respiratory diseases must be controlled if TB is to be eradicated.

The campaign which begins in May will make no appeal for funds. It will place stress on the private physician-patient relationship.

Is the spring of 1963 too early to undertake so vast a program concerning these symptoms of pulmonary disease while our knowledge is still limited? This is not the issue. Through this campaign, alert physicians and non-medical men and women associated with tuberculosis associations will adapt themselves to new thinking about respiratory diseases and will begin to anticipate the problems that beset those needing help. Only the prepared mind can be capable of tackling such new problems. Thus, the sooner these new tasks are clarified and the magnitude of the problem more clearly defined, the quicker results may be achieved.

It took half a century of scientific investigation to produce the modern drugs that revolutionize our approach to tuberculosis. Other respiratory diseases may be more difficult to conquer. For the present, if individuals with chronic cough and shortness of breath can be moved to seek medical care, many will find that they can be relieved of their symptoms. Others can be taught to live more comfortably with conditions that cannot be cured. If this is accomplished, the campaign will have served a useful purpose.

May 10, 1863

THIS ISSUE of the Virginia Medical Monthly coincides with the centennial of Stonewall Jackson's death. Lay and medical journals alike will carry articles on this remarkable man's meteoric rise to fame and his fatal wounding by his own troops on the day of his greatest victory. Why, it may be asked, did Stonewall, an obscure college professor in 1861, in less than two years capture the imagination of successive generations of students of the American Civil War as no other participant has done?

From a purely medical standpoint this question is not difficult to answer. The friendship that existed between the austere Jackson and his young Corps surgeon, Dr. Hunter McGuire, exceeds in human interest any patient-physician relationship in military annals. Furthermore it has an especial fascination for those of us who live in Virginia, for these two men were peculiarly our own. They were born in Virginia, they achieved their fame within the boundaries of this State and they now rest within its soil—McGuire in Richmond and Jackson in Lexington.

Dr. McGuire's moving account of Jackson's wounding, operation and death eight days later first appeared in the May, 1866, issue of the Richmond Medical Journal and was reprinted in the Virginia Medical Monthly in October, 1961. His terse, matter-of-fact, almost laconic description of the amputation of Jackson's arm, performed by the uncertain light of a lamp during the early hours of the Second of May, 1863, gives no indication of the emotions this 27-year-old surgeon must have felt as he operated upon the idol of the South and the War's most publicized general.

Initially his patient did well and the General even discussed the date he might return to the field. Then a pleural rub developed, his breathing became difficult and four days later he died in the Chandler cottage at Guinea Station. Dr. McGuire attributed his death to pleuro-pneumonia as the result of a fall from the litter as he was carried from the battlefield. Dr. L. Whittington Gorham, a distinguished New York pathologist, in this month's Guest Editorial, makes a strong case for a pulmonary embolus which arose from the amputation site and migrated to the lungs. We will never know the cause but no physician can read McGuire's case report without projecting himself into the role of this youthful surgeon, who carried on his shoulders for eight days and nights, which must have seemed endless, the hopes of the Confederacy. The catastrophic outcome would have terminated the career of a lesser man but Dr. McGuire, in the post-war years, became the outstanding surgeon of the South.

The adjective "irreplaceable" is often loosely used but no man deserved this description more than Stonewall. Had he lived the South probably would have won. This does not mean the North would have been overwhelmed. An army of six or seven hundred thousand would not have

overwhelmed two and a half million dedicated soldiers, regardless as to how inept their leadership may have been. It was not that simple; other factors were at work. The summer of 1863 marked the half-way point in the War. In the East, and this theater loomed larger in the popular mind because of the proximity of the capitals, the Federals had failed to win a single major victory. Two years of costly fighting found them still north of the Rappahannock. The North was weary of the conflict. Had Southern arms prevailed at Gettysburg and General Lee had turned eastward, as he doubtless would have done, to cut off Washington from the North, a negotiated peace would have been almost inevitable. But this was not to be.

At Gettysburg, Lee faced an Army only slightly larger than his own. The odds were less threatening than in any other battle fought by the Army of Northern Virginia. Why then did victory elude him? The answer lies in Jackson's death seven weeks earlier at Guinea Station. In the reorganization that followed his death, Jackson's old Second Corps was divided and assigned to his two former division commanders. Neither leader lived up to the high standard he had set while serving under Jackson. Stonewall had conditioned Lee to expect the impossible and not until the crucial battle of Gettysburg did he discover that without Jackson the Army of Northern Virginia was no longer invincible. Before General Lee could lower his sights the battle—and the war—was lost.

General Lee was never given to exaggeration but after Appomattox he was quoted as saying, "If I had had Jackson at Gettysburg I should have won the battle, and a complete victory there would have resulted in the establishment of Southern Independence."

Stonewall's wounding and death then transcends in importance any casualty in that great conflict and May 10, 1863, is a momentous date in our nation's history. The Rev. James Power Smith, an ante-bellum ministerial student and General Jackson's aide and chaplain, shared with Dr. McGuire the distinction of being on closer terms with this reserved man than any other member of the General's military family. When Jackson was wounded Captain Smith became his around-the-clock nurse and ministered to him until the end. The Rev. Smith lived well into the twentieth century. The writer was privileged to know him and on one occasion had the temerity to ask why, in his opinion, did a just God permit so good a man and one so badly needed to be killed at such a critical time. "Son," he replied, "When the Lord in His infinite wisdom decided it was best for the South to lose, He realized it was necessary to dispose of His servant Stonewall first."

No better explanation has been given in the century that has elapsed since Jackson's death and it is unlikely that one ever will.

HARRY J. WARTHEN, M.D.

New Members.

The following new members have been received into The Medical Society of Virginia during the month of March:

James A. Burwell, M.D., Falls Church
William Casey, M.D., Annandale
Yu-hua Chao, M.D., Arlington
Richard Franklin Clark, M.D., Richmond
Howard Louis Cox, M.D., Yorktown
Robert Milton Kesler, M.D., Norfolk
Max Errington Lassiter, M.D., Danville
William McKinnon Massie, M.D.,
Charlottesville
Orhan Muren, M.D., Richmond
Gustavo A. Nava, M.D., Arlington
George William Sessoms, M.D.,
Shenandoah
John Randolph Smith, M.D.,
Charlottesville
Jose Luis Solana, M.D., Williamsburg
George Harry Williams, M.D., Norfolk
Harvey B. Williams, Jr., M.D.,
Woodbridge

Dr. Newman Honored.

Dr. Samuel Newman, Danville, was honored recently at a testimonial dinner by the Junior Wednesday Club. He was honored for his leadership in child care in Danville and in Virginia and for his active role in community life over several decades. More specifically the testimonial was for his work at the Samuel Newman Children's Clinic which is sponsored by the Wednesday Club. Dr. Newman was presented with an afghan formed by small squares, each knitted by a member of the Club as a personal gesture of affection and appreciation. He was also given a large silver pitcher.

Dr. Newman is credited with having administered the first blood transfusion to a child in Virginia and the first to organize a blood bank in Virginia.

Meeting Dedicated to Drs. Sutton and Waddell.

The meeting of the Virginia Pediatric Society, held in Williamsburg, the first weekend in March, was dedicated to Drs. William W. Waddell, Jr., and Lee E. Sutton, Jr. Dr. Waddell headed the department of pediatrics at the University of Virginia for nineteen years before his retirement and is still serving as professor of pediatrics. Dr. Sutton served as chairman of the department of pediatrics at the Medical College of Virginia for twenty years before his retirement. They were presented with plaques which will be placed in their respective medical schools. Among the participants in the program were former residents who served under the two men.

Smyth County Medical Society.

Dr. T. S. Ussery, Marion, has been installed as president of the Smyth County Medical Society. Other officers are Dr. Charles N. Austin, Abingdon, vice-president, and Dr. James E. Patterson, Marion, secretary-treasurer.

Dr. Byrd Honored.

A portrait of Dr. Holmes G. Byrd, Louisa, has been presented to the Louisa County Memorial Medical Service Center to be hung in the lobby of the Louisa Hospital. The portrait by Albert B. Vondra was commissioned by the Louisa KA Club. In 1943, Dr. Byrd opened the old Louisa Hospital, the first one in the county and the forerunner of the present Medical Center.

Dr. Henry David Lederer

Has been named professor and chairman of the department of psychiatry at the Medical College of Virginia, succeeding Dr. Robert A. Senescu who resigned last July. Dr. Lederer has been serving as associate

professor of psychiatry at Georgetown University. His appointment becomes effective July 1st but he will serve as consultant until that time.

Dr. Edwin L. Kendig, Jr.,

Richmond, was a guest speaker at the annual session of the Medical Association of Georgia, May 5-8. His topic was Tuberculosis in Children.

Dr. Ralph G. Beachley,

Arlington, has been presented a plaque honoring him for having served as Director of Public Health in Arlington for twenty-five years. This was presented by the Metropolitan Health Officers' Association which is composed of public health officials from Maryland, Virginia and the District of Columbia.

SKF Student Fellowships.

Thirty-one United States medical students have been awarded foreign fellowships which will enable them to obtain supervised medical experience in underdeveloped countries. The fellowships are made possible by a \$60,000 grant from Smith, Kline and French Laboratories. The students are selected by a committee of six medical educators. Two Virginia school students are among those for this year. They are: Richard C. Brown, Norfolk, a senior in the University of Virginia School of Medicine, who will go to the Philippines; and Duane A. Miller, Hagerstown, Maryland, junior in the Medical College of Virginia, and his wife, Esther, who will go to Ethiopia.

Training in Psychiatry.

The Department of Neurology and Psychiatry of the University of Virginia School of Medicine announces a new program for

training in psychiatry. The purpose is to foster the development of psychiatric training for non-psychiatric residents and to extend support to practicing physicians who want intensive psychiatric training but who do not intend to become psychiatrists.

Interested physicians should contact Dr. Richard W. Garnett, Jr., Department of Psychiatry, University of Virginia, Charlottesville.

Grant for Radiation Therapy Unit.

A federal grant of \$61,545 has been made to the Medical College of Virginia to go toward construction of an addition to the radiation therapy center. This addition will double the center's treatment capacity. It will house a cobalt-60 teletherapy unit and will be adjacent to the Maxitron, a two-million volt x-ray therapy machine, in the basement of Ennion G. Williams Hospital. This area's facilities also include a three-room radioisotope diagnostic study unit and a 300-volt x-ray therapy machine. The amount above the federal grant necessary for this addition is being donated by an anonymous donor.

Obstetrician-Gynecologist

Wishes to relocate in Virginia for family reasons. Currently in private practice in Seattle. Age 39, university trained and board eligible with teaching experience. Available July. All possibilities considered. Write Robert Hodges, M.D., 10624-226th Street, Southwest, Edmonds, Washington. (*Adv.*)

Opportunity for General Practitioner

Interested in starting clinic at Hershey, Pennsylvania, in new large colonial residence with offices, adjoining Snavely Memorial Nursing Home. Contact Alba K. Simmons, 3106 Forest Hill Avenue, N. W., Roanoke, Virginia. (*Adv.*)

Obituaries

Dr. Edward Lewis Johnson,

Prominent physician of Bedford, died March 23rd, at the age of eighty-four. He was a graduate of the Medical College of Virginia in 1907 and had practiced in Bedford since that time. Dr. Johnson was one of the leading citizens of Bedford County, having served four terms on the Bedford Town Council and in 1950 was elected Mayor for a two-year term. He served on the Bedford Town and County School Boards and had been both president and secretary of the Bedford County Medical Society. Dr. Johnson was one of the last of the horse and buggy doctors in his area. Recently he stated that he bought his first Ford car in 1910 and had worn out twenty-five cars administering to patients in all sections of the County. Dr. Johnson had been a member of The Medical Society of Virginia since 1908 and was made a Fifty-Year Member in 1957.

A daughter and three grandchildren survive him.

Dr. James Whitney Anderson,

Prominent Norfolk physician, died March 6th of congestive heart failure. He had been a member of The Medical Society of Virginia for forty-two years. The following resolutions were adopted by the Norfolk County Medical Society:

Dr. James W. Anderson, beloved member and past president of this Society, died in his sixty-seventh year in Norfolk on March 6, 1963, following a long illness.

He was a native of Oklahoma City. After attending Riverside Military Academy in Georgia, he took his M.D. degree from Emory University in Atlanta in 1916, and interned at old St. Vincent's de Paul Hospital in Norfolk. He served as Captain in the Army Medical Corps in 1917-1918 and after post-graduate work in New York Skin and Cancer Hospital in 1918-1920, returned to Norfolk to specialize in Dermatology.

He was a Fellow of the American Academy of Dermatology and Syphilology; a member of the So-

ciety of Investigative Dermatology and the Washington Dermatology Society, and of the Atlantic and Southeastern Dermatological Conference. He was also a member of The Medical Society of Virginia, the Southern Medical Association, and the American Medical Association.

He was also former President of the Staffs of old St. Vincent's Hospital and of the newer De Paul Hospital, and served as President of the Norfolk County Medical Society in 1914.

Dr. Anderson was active in the life of his community and during World War II was President of the Tidewater Camp and Hospital Service for the American Red Cross.

His recreation was divided between flowers, stamps, and fishing. He held membership in the American Camellia Society, was twice President of the Tidewater Anglers Club, and for many years was a member of the American Philatelic Society. As one of the founders of the Norfolk Philatelic Society in 1929, he served as its President for several years. He was an Episcopalian.

He was a student, a practitioner of medicine first, but was always willing to serve his friends and patients in the kind, quiet, and sincere way which made him lovable to us all. He sincerely believed and practiced a live and let live attitude of life.

His wife, Alma Boone, and a son, Dr. Charles W. Anderson, with two grandsons, survive him.

It is recommended that this Resolution on Dr. James W. Anderson be included in the minutes of the Norfolk County Medical Society, and that a copy be sent to the family, and to The Medical Society of Virginia.

VERNON L. COFER, M.D.

HARRY PARISER, M.D.

WALTER P. ADAMS, M.D., *Chairman*

Dr. Morris Bryan Beecroft,

Newport News, died of a heart attack in his home on February 26th. He was seventy-one years of age and a graduate of Albany (N.Y.) Medical College in 1913. Dr. Beecroft had practiced on the Peninsula since 1919 and had served as pathologist at the old Elizabeth Buxton Hospital and Mary Immaculate Hospital for forty-four years. He was also pathologist at Dixie and Riverside Hospitals and was consulting pathologist for the Newport News Shipbuilding and Dry

Dock Company. Dr. Beecroft had been a member of The Medical Society of Virginia for forty-two years.

His wife, a son and a daughter survive him.

Dr. Charles Walker Putney,

Staunton, died March 16th after a long illness. He was sixty-nine years of age and received his medical degree from the Medical College of Virginia in 1921. Dr. Putney had practiced in Staunton since 1923. He was a member of the Kiwanis Club, the Staunton Shrine Club, Acca Temple, the Knights of Pythias, and the Knights of Khorassan. He was a former president of the Augusta County Medical Society and had been a member of The Medical Society of Virginia for forty years.

His wife and a son survive him.

Dr. Charles Bayne Stringfellow

It is with deepest regret that we record the death of Captain Charles Bayne Stringfellow, (MC) U. S. Navy, retired, who died on January 10, 1963, in the U. S. Naval Hospital, Portsmouth, Virginia, after a short illness.

Dr. Stringfellow was born in Culpeper on September 28, 1899. He was awarded the degree of Doctor of Medicine from the University of Virginia in June, 1928. Dr. Stringfellow was commissioned a Lieutenant Junior Grade in the U. S. Navy immediately upon graduation and served an internship in the Brooklyn Naval Hospital from 1928 to 1929. He

served in all ranks from Lieutenant Junior Grade to Captain in the Navy Medical Corps with distinction. He served in many ships, stations and Naval hospitals over a period of thirty years. Dr. Stringfellow received postgraduate education at the Naval Medical School, Washington, D. C., the Army Field School at Carlyle Barricks, Pennsylvania, and residency at Eastern State Hospital, Williamsburg. He served his country honorably for over thirty years as a Naval Medical Officer.

He was a member of the American Medical Association, The Medical Society of Virginia and the Norfolk County Medical Society at the time of his death. Dr. Stringfellow was a great physician and all who were privileged to know and work with him mourn the passing of a true friend and a great colleague. He had a gentle manner and was kind and helpful to his colleagues. In active life, he worked quietly and efficiently. He loved the art of the practice of medicine and was the essence of courtesy and kindness to his patients. At the time of his death, he was Director of the After Care Clinic of the Norfolk Mental Health Center.

Dr. Stringfellow is survived by his wife, Mrs. Jeané Rigagneau Stringfellow, and one son, Dr. Charles Andre Stringfellow, now a resident in Internal Medicine at the Bellevue Hospital, New York City.

This committee, which was appointed by the Norfolk County Medical Society, desires to place on record this tribute as an expression of respect; and further requests that this resolution be adopted by the Norfolk County Medical Society and recorded in its regular minutes, and that a copy of this resolution be sent to Dr. Stringfellow's family and the Virginia Medical Monthly.

JOHN S. THIEMEYER, M.D.

CHARLES L. FERGUSON, M.D.

GORDON B. TAYLOE, M.D., *Chairman*

Guest Editorial

Medicare—A New Social Disease

LIKE OTHER SOCIAL DISEASES, medicare is a violation of fundamental laws of human behavior, the misapplication of necessary elements for the extension of life in human beings, and a travesty on sound sociological relationships. It is a violation of the fundamental laws of human behavior because it saddles the young with intolerable burdens for the aged, most of whom do not need help, and who stand to be pauperized by unwarranted expenses in their behalf. It removes the proper stimulus of voluntary child-parent responsibility which is characteristic of western mores. It is a misapplication of the necessary elements for the extension of human life because it takes away the individual's sense of responsibility for himself and makes him because of age a mere ward of the younger groups of society. It is a travesty on sound sociological relationships because medicare is based on political rather than humanitarian needs.

The history of the disease goes back to the days of Otto von Bismarck of Germany, whose government decided that at age sixty-five human beings automatically became in need of special treatment by society. The recognition of this need has proven to be partly desirable in the realm of social security to provide a floor of support to those whose failing physical and financial resources made it necessary to under-gird them financially as a reward of society for their long service to it. More recently our government, in 1935, adopted the Social Security system to which employer and employee contributed their payroll deduction to a fund which would provide such a floor after age sixty-five. The medical profession has not opposed this except recently when its benefits have been broadened to include medical care with the inevitable control of the professions, in the health field, by politicians. Americans have in the past been satisfied to have medical care supervised personally by their doctors. Any attempt to remove health matters from doctors is fraught with socialistic, if not communistic, danger. For it was Nicholai Lenin who stated that "when the present independent structure of medicine is destroyed, the nationalization of the rest of the people is easy."

Another etiological predisposing cause of medicare is that unthinking people want as much from the government as they can receive for "free" without realizing that a government that is big enough to give them everything they want is powerful enough to take away everything they have, including their most precious gift, namely the gift of individual

freedom. Unthinking people seem to have lost their concept of freedom. It is this schizophrenic attitude which causes people to clamor for government medicare and politicians to hold this seductive bait before them for its vote-getting power.

Other predisposing factors are the comparison of our total health picture with that of England, Sweden, Germany, and France, and even our good neighbor, Canada, all of whom have socialistic medicare. Here again unthinking people will say, "If they have it, why can't we?"

Our increasing geriatric population, which has grown from four million in 1910 to nine million in 1940 and seventeen million today, makes for a real change in our attitude toward health and medical care. The suddenness of the increase has caught us off balance and our government is floundering in a political way to solve a sociological problem.

The signs and symptoms of this social disease are this very increase of not only the life span but in the growth of the population as a whole. Whereas the population has doubled since the turn of the century, those in the age sixty-five and over have quadrupled. Medical care has become increasingly expensive because of better drugs, techniques, and hospital facilities. People desire to have the best even though they may be unable or unwilling to pay for it. This expense has been further aggravated by our government's inflationary policies, labor's continued spiraling of wages beyond productive gains, and the panicky philosophy that we must continue to solve all problems now as though this were the last administration on earth. It bodes to be so, if this forced draft is continued. We seem to be trying to bury ourselves just as Khrushchev has predicted.

Any government which permits escalation of appropriations for research at the National Institutes of Health from \$52,000,000 in 1951 to \$880,000,000 in 1963 is certain to escalate the cost of medicare, estimated at \$2,300,000,000 for the first year, to the moon or bankruptcy by 1973. Escalation is a favorite vote gathering method of demagogues in Congress who recommend increases in appropriations over and above considered requirements by government agencies. Eight hundred and seventy-five million dollars have thus been added to askings of the National Institutes of Health in the last eight years.

The pathology of medicare may be described as gnawing unrest of American society which has become sick in such a way that politicians instead of statesmen are respected and returned to Washington for further unstatesmanlike political behavior. Staying in office has become more important than using that office for the proper benefit of constituents and the country at large. The selfish, pressuring minority is listened to until they are considered the majority by dint of political trouble they are able to stir up. The unthinking people are sick nationally and we need some leadership to have the courage to shuck off politics and put on the breastplate of statesmanship. Medicare is but a pathologic aspect of a far deeper disease called socialism.

How can this social disease called medicare be cured? The first principle in the treatment of any disease is physiological rest. Over-treatment makes many diseases worse and our government is over-treating medical care for the aged.

Fifty-three per cent of all people over sixty-five have some form of health insurance. In 1952 there were only twenty-six per cent so covered. Given time the problem will become a diminishing one. The government already cares for some four million on old-age assistance programs and Veterans who need help are cared for medically at government expense. The Kerr Mills bill in which Federal and State matching funds are provided in a joint effort is now in effect in some thirty states. Virginia's General Assembly has initiated a modest program in 1964. This needs to be increased. This bill provides for the needy whereas the medicare plan provides for all under Social Security regardless of need and then provides only twenty-five per cent of medical care of those covered. It has been estimated that the Kerr Mills implementation in Virginia will cost Federal and State taxpayers two and one half million dollars annually while medicare under Social Security will cost seventeen million dollars annually of Federal money out of the pockets of those in Virginia covered by Social Security.

The disease is Medicare under Social Security. The cure is to use the tried and true American know-how guided by doctors, free enterprise private and non-profit insurance like Blue Cross-Blue Shield. The government should stop trying to treat itself medically and making fools of its taxpayers and leave the treatment to those competent to treat disease and to medicine's strong free enterprise allies, the individual American, private and non-profit insurance agencies, and the already established governmental agencies which have always undergirded the poor, which we always have with us.

Our youthful and in many ways immature Administration will learn that in this social disease, as in some other types of disease, the less meddling the better. The layman unthinkingly at times blurts out, "Don't stand there, do something" when the wise doctor knows that "Stand there, do nothing" is often the soundest approach to cure, especially when the disease is already being relieved by powerful natural causes which are in the long range curative, while sudden uncalled-for treatment may indeed set in motion forces which may be fatal to the body politic. If this iniquitous bill passes it will be another grievous error on the part of our Government second only or equal to the fiasco of the Bay of Pigs.

If Medicare under Social Security is enacted, I predict that within ten years we will have complete, across the board socialized medicine.

JOHN P. LYNCH, M.D.
*Chairman of Committee on
Aging and Chronic Disease*

1000 West Grace Street
Richmond, Virginia

Delineation of Internal Body Organs and Tissues by Radioisotope Scanning

CHARLES D. SMITH, M.D.
Roanoke, Virginia

Although radioisotope scanning as a medical diagnostic technique still has a limited application, its use will probably expand rapidly in the next few years.

DEMONSTRATION of the size, shape, position and, in some instances, the function and pathologic state of some internal body organs and tissues by using radioactive isotopes is a relatively new method of diagnosis, introduced and developed in the last decade.^{1,2,3}

The procedure is based on a planned pattern of movement of a device sensitive to gamma rays near the surface of a patient to whom a tracer dose of a radioactive isotope has been administered. Figure 1a shows

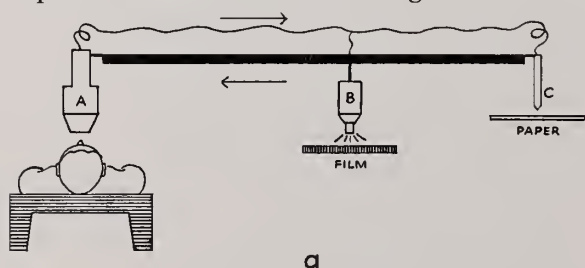


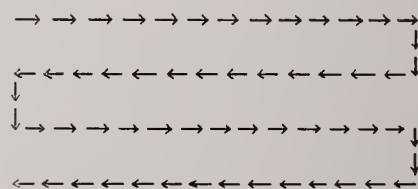
Fig. 1a. The patient lies on a couch. The detector "A" moves above the patient in a pattern similar to the path shown in Figure 1b. A light source "B" and a pencil "C" are attached to the detector and move synchronously with it. When a gamma ray is picked up by "A", data is recorded on film by "B" and on paper by "C".

how the probe moves synchronously with a photographic recording instrument and with a paper marker; figure 1b shows a drawing of the path followed by the probe.

From Paul C. Buford Diagnostic Radiosotope Laboratory of the Roanoke Memorial Hospital.

As the probe moves over the patient, it picks up gamma rays from the radioisotope that has been administered, and these impulses are recorded on film (by the light source "B") and on paper (by the pencil "C").

The other illustrations accompanying this article demonstrate that the technique of radioisotope scanning and the interpretation of the data on the scans are based on the arrangement of dots on paper or on film—dots that represent deposits of radioactive material in a tissue or organ. A given isotope will lodge in a specified tissue in greater



b

Fig. 1b. Path followed by the probe. The spacing and the speed can be regulated by the operator, and an area 14 by 17 inches can be covered.

amount than in the surrounding tissues; thus, a scan of the area will show differences in the degree of concentration, which permit conclusions about the pathologic state of the tissues covered by the scan. Experience has shown that normal cells will absorb certain compounds, whereas abnormal cells either concentrate the compound poorly or not at all. Thus, certain patterns of dots may be identified as evidence of disease. A radiograph of the same area, superimposed on the scan helps demonstrate the position of the organ or tissue. (See illustrations)

The radioactive materials used in scanning are administered in the form of chemical compounds (sodium iodide is given orally;

the other compounds are given intravenously). Table I lists most of the isotopes commonly used today in scanning. These can be obtained from pharmaceutical com-

In medical scanning, the detector is composed of a heavy lead shield partly enclosing a sodium iodide crystal. The crystal, when struck by a gamma ray, produces a tiny flash

TABLE I

ISOTOPE	Compound	Physical Half—Life	Scan Area
I 131.....	Sodium Iodide	8.1 Days	Thyroid
I 131.....	Serum Albumin	8.1 Days	Brain, Blood Pools
I 131.....	Rose Bengal.....	8.1 Days	Liver
Au 198.....	Colloidal Gold.....	2.7 Days	Liver
Cr 51.....	Sodium Chromate	27.0 Days	Spleen
Hg 203.....	Neohydrin	47.0 Days	Kidneys, Brain

panies by physicians who hold a license for each test.

Each isotope used in scanning is a gamma ray emitter. Gamma rays, which can penetrate considerable thicknesses of tissue, originate as the result of disintegration of radioactive atoms in the tissue where a radioactive compound has been deposited. The gamma rays emerge through the body surfaces, and a detector sensitive to gamma—if located over the site where the gamma leaves the body—will pick up this evidence and pass it on to the recording devices.

of light similar to the light produced when a fluoroscopic screen is struck by x-ray. These tiny flashes of light can be converted into an electric current and amplified to operate recording devices.⁴

Medical scanning techniques can be used for the diagnosis of a number of conditions and diseases, some of which are shown in figures 2 through 7. Briefly, the procedure can be used to demonstrate the size, shape, position and some functional and pathologic states of the thyroid, liver, spleen and kidneys; to differentiate between an enlarged



Fig. 2. Cerebral scan. Right lateral scan superimposed on a radiograph of the skull demonstrates an area of increased radioactive deposit in a malignant glioblastoma multiforme of the temporal lobe. The patient had been given 0.5 cc. of Lugol's Solution (to block the thyroid gland and prevent its taking up the isotope), and an hour later was given an intravenous dose of human serum albumin tagged with I 131 (2.5 microcuries per pound of body weight). The scan was made 24 hours after the administration of the isotope.

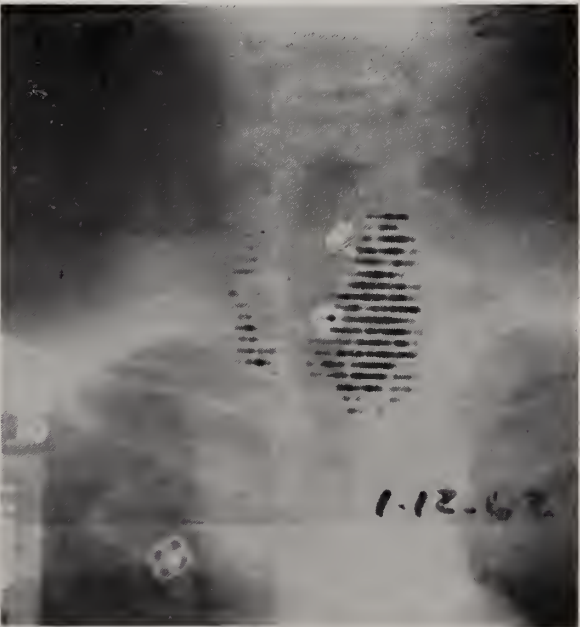


Fig. 3. Thyroid scan made 24 hours after an oral dose of 30 microcuries of sodium iodide I 131 shows some regeneration of the right lobe following surgery 15 years earlier. The scan was done to learn whether the soft tissue density under the right clavicle was substernal extension of the thyroid.

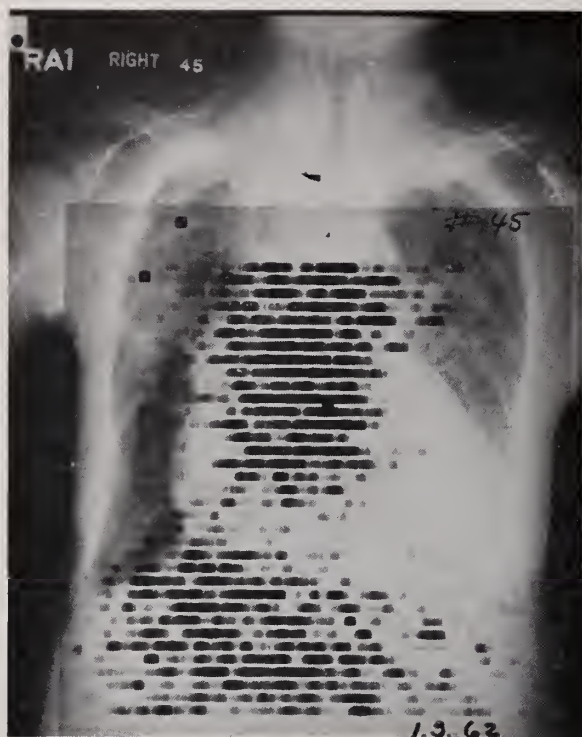


Fig. 4. Mediastinal scan showing a "clear" space around the periphery of the cardiac silhouette and between the blood pools of the heart and liver. The clinical, electrocardiographic findings and this scan are consistent with pericardial effusion. The case was not proved, because permission for autopsy was denied. The patient was given 0.5 cc. of Lugol's Solution, and an hour later was given 100 microcuries of serum albumin I 131. An hour after the isotope was given, the scan was made. Aneurisms also can be demonstrated by this method.

heart and pericardial effusion; to outline aneurisms of the thoracic and abdominal aortas; to locate aberrant thyroid tissue; and to demonstrate brain tumors. Recent studies show that strontium 85 can be used to identify some bone lesions, and scanning of the pancreas has been done in animals by using selenomethionine tagged with selenium 75; however, demonstration of the pancreas in humans is still an experimental procedure.^{5,6,7,8,9,10}

Scans are done with tracer doses of radioactive material, and thus with less radiation to the patient than he would receive incident to a radiographic-fluoroscopic examination of the stomach. The procedure is atraumatic, carries no morbidity or mortality, and is frequently less time consuming and less complicated than other tests designed to arrive at the same diagnosis. While the patient lies quietly on a couch, the scan is



Fig. 5. Scan of the liver one hour after an intravenous dose of 100 microcuries of Au 198 colloidal gold. The relatively large particles of the colloidal gold used (average: 15 millimicrons) are taken up by the von Kupfer cells of the liver. This scan shows a large defect in the central part of the liver and defects producing the scalloped margins in the left lobe. These proved to be metastatic carcinoma from the rectum. Defects greater than 1.5 centimeters in diameter and the size, shape and position of the liver can be demonstrated by this method. Some functional states of the liver can be shown by using Rose Bengal tagged with I 131, which is absorbed by the functioning cells of the liver.

made, requiring about thirty minutes to complete. Cerebral scans take approximately three times as long, because three separate scans are made.

The cost of a photoscanner is relatively high, which may limit wide use of the device. Another limiting factor has been the need for thorough training of the physician who uses a scanner. However, the latter factor is less of a problem now that the number of units in use is increasing rapidly, and the former should become less of a limiting factor with the development of mass production of scanners, which is certain to follow an increased demand for them.

Summary

A brief review of the current status of medical radioisotope scanning and some illustrations of scans have been presented. The present degree of development of electronic equipment and the radiopharmaceuticals now available make medical scanning a practical technique in areas beyond research institutions. Although this medium



Fig. 6. Scattered and irregular deposits of radioactivity in the large spleen of a patient with aplastic anemia. Ten cc. of the patient's blood are tagged with 200 microcuries of Chromium 51 sodium chromate, treated for an hour at 49 degrees centigrade and re-injected. The scan can be made within an hour. The size and shape of the spleen, defects within the spleen and an accessory spleen can be demonstrated.

of medical diagnosis still has a relatively limited application imposed upon it by the complicated nature of the machines used and by the small number of radioactive compounds available, these limitations should be overcome in the near future. New chemical compounds are being developed, and improvements in electronic equipment are being made—evidence that scanning techniques should expand rapidly.¹¹

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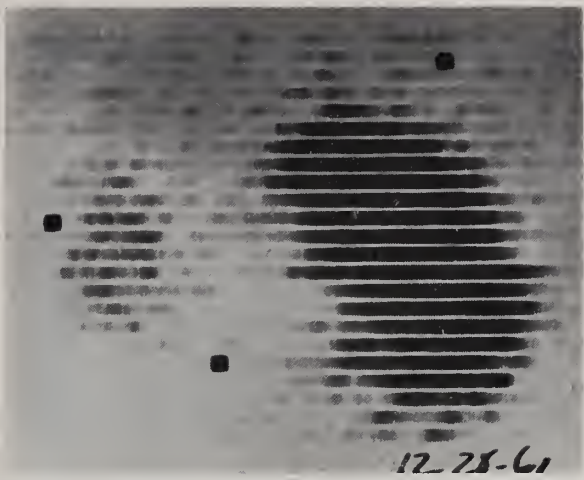


Fig. 7. Renal scan made one hour after an intravenous dose of 50 microcuries of Hg 203 Neohydrin shows a normal kidney on the left and a small kidney with reduced activity on the right. The urogram showed questionable evidence of function, but the outline of the kidney was not demonstrated. Diagnosis: Chronic pyelonephritis. The size and shape of the kidneys and the presence and size of tumors and infarcts can be demonstrated; the method may also be used to demonstrate ectopia.

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Surgical Treatment of Cancer of the Nose

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Simple excision and primary closure will usually cure early cancer of the nose. After radiation and/or inadequate surgery, the treatment often demands extensive surgery and complex reconstruction.

CANCERS OF THE NOSE are insidious, slow growing neoplasms. They may often continue to grow in essentially their primary location for as long as a decade before successful therapy is instituted. Despite their low grades of malignancy, they demonstrate a strong proclivity for recurrence. And over one-half of the cases herein presented had been treated for varying degrees of time with numerous modalities of therapy before receiving final definitive treatment on our Service (Tables I and II).

Table I
DURATION OF SYMPTOMS BEFORE TREATMENT

	Minimum	Maximum	Average
Recurrent cases—29...	1 yr.	25 yrs.	11.6 yrs.
Untreated cases—15...	0.18 yrs.	10 yrs.	1.8 yrs.

Previous radiotherapy, surgery or a combination of both methods were the most com-

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mon treatments in the group of recurrent nasal cancers. However, cauterization with cancer pastes and other noxious agents were occasionally used.

Approximately 29% of all epithelial tumors of the skin of the head and neck involve the nose. About 80% of these are basal cell carcinomas. Epidermoid cancer of the nasal skin is less common. Epidermoid cancers of the nasal mucosa are the least common of all nasal cancers.

Skin cancer of the nose is in no way different pathologically from other epithelial malignancies of the skin elsewhere. And yet a review of the cases receiving final

Table II
PREVIOUS TREATMENT IN RECURRENT CANCER—29 Cases

Radiotherapy + surgery.....	11
Radiotherapy + cautery.....	1
Radiotherapy alone.....	10
Surgery alone.....	4
Cautery alone.....	2
Cancer paste.....	1

definitive treatment on the Plastic and Maxillofacial Surgery Service indicates that such tumors often are refractory to all but the most aggressive treatment. We are reporting the results of 44 cases treated for nose cancer. (Table III) Our rela-

Table III
CASES TREATED FOR NOSE CANCER 1956-1962—44 Cases

Basal cell.....	29
Basosquamous.....	2
Epidermoid.....	9
Basal + squamous.....	1
*Radionecrosis with cancer.....	2
Radionecrosis alone.....	3
*Counted twice.	

tively small, but significant, series indicates that basal cell carcinomas of the nose occurs about three times as often as epidermoid cancer.

Methods of Treatment

Table IV summarizes the methods utilized. It substantiates that those cancers which had received no treatment before admission to our Service were treated with far greater facility and expediency than the recurrent tumors. In the latter group the reconstruction was complicated by surrounding tissue changes associated with previous radiation treatment and surgery. The

facial defects were so extensive that reconstruction was appreciably prolonged.

Excision with Primary Closure

Ideally, small lesions should be excised and their defects closed primarily. This is often possible when the lesion is five millimeters or less and is so located that closure can be effected without distortion of the nostrils or surrounding structures. Larger

Table IV
DEFINITIVE TREATMENT OF PREVIOUSLY UNTREATED CANCERS

	Excision	Excision + Graft	Excision + Composite Graft	Excision + Flaps	Excision + Prosthesis
Basal cell.....	3	5	2	2	
Squamous.....	1	1	1		
Basosquamous.....	1				

One patient refused treatment after biopsy.

DEFINITIVE TREATMENT OF RECURRENT CANCERS

	Excision	Excision + Graft	Excision + Composite Graft	Excision + Flaps	Excision + Prosthesis
Basal cell.....	3	4		13	
Squamous.....	2	1		2	1
Radionecrosis.....		1		2	

boundaries of the malignancies were thus obscured, and it was impossible to determine whether or not malignancy was present despite repeated biopsies in some cases. Therefore, the magnitude of such resections was often large, and the resultant nasal and

defects require the use of a skin graft. (Figures 1-3) Full thickness defects of the nose, no larger than 1.5 centimeters in their widest diameter, may be reconstructed immediately by the use of a composite graft of skin and cartilage removed from the ear.



Fig. 1. Recurrent basal cell carcinoma of left nasal bridge extending nearly to canthus. Previous radiation and surgical excision.



Fig. 2. Excision exposed nasal bone, upper lateral cartilage, medial canthal ligament.

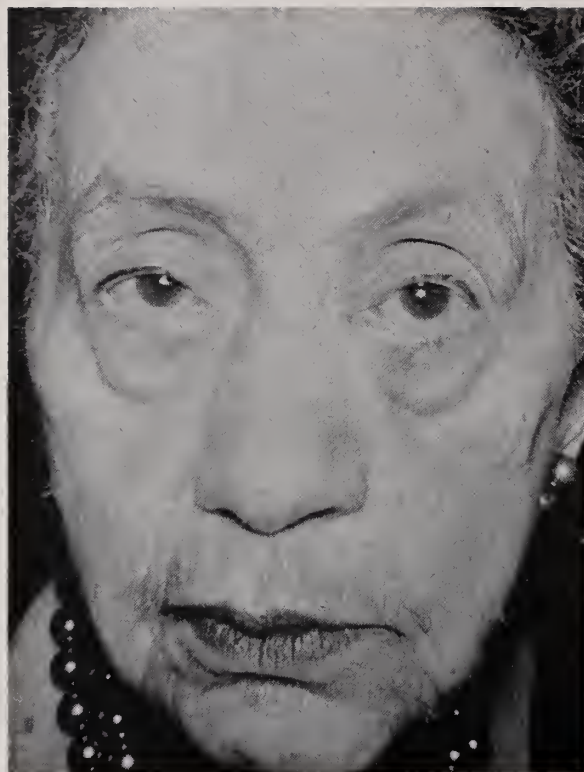


Fig. 3. Three years after excision and split grafting. Good lid function. No evidence of cancer.



Fig. 4. Previously untreated epidermoid carcinoma of right ala in 80-year old lady.

(Figures 4-7) Prerequisites for success in this procedure include careful matching of the graft with the size and configuration of the nasal defect. Previous radiotherapy produces so much surrounding scar that the above method of treatment is obviated. Composite grafts from the helical portion of the ear are ideal for nostril and columella defects. The included cartilage offers enough support to stabilize the nasal tip. Small full thickness defects of the dorsum can be suitably closed primarily with similar shaped composite ear grafts removed from the posterior conchal region.

Excision with Pedicle Flap Reconstruction

Larger nasal defects require pedicle flap reconstruction. Flap reconstruction of the nose is perhaps the oldest attempt at restorative surgery. It was first reported in the 8th Century B.C. These heroic, but abortive, attempts at reconstruction failed because the replacement of lining had been over-



Fig. 5. Full thickness resection of nostril.



Fig. 6. Reconstruction with composite ear graft.



Fig. 8. Thrice recurrent radioresistant basal cell carcinoma of right ala with extension across tip into opposite vestibule.

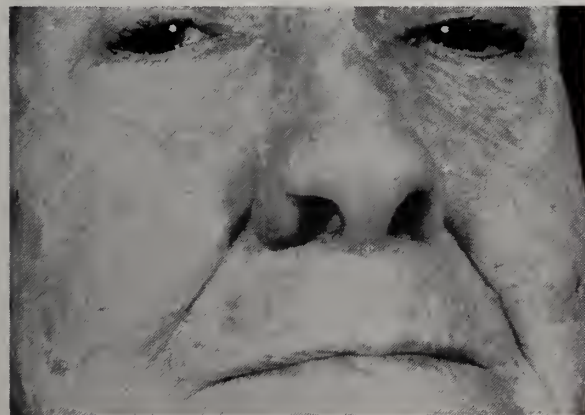


Fig. 7. Photograph taken one year after treatment. No sign of cancer four years following definitive treatment.

looked as an essential component of this method. Over 2600 years later, Petrali established the necessity for such an addition. Following that monumental contribution, essentially little has been added to this particular facet of plastic surgery. (Figures 8-11) It is beyond the scope of this paper to review all flaps utilized in nasal reconstruction. Suffice it to say, the forehead is

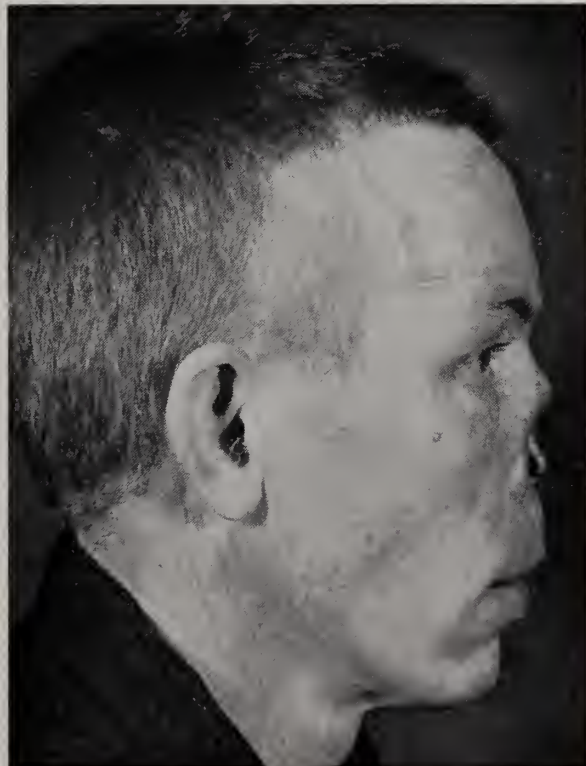


Fig. 9. Extent of resection. Left supraorbital loop-shaped scalp flap delayed at time of excision.

still the ideal site for such flaps. Pedicles containing the terminal radicles of the external carotid and supraorbital vessels enable the plastic surgeon to construct and transfer such flaps with precision and dispatch. Yet, the subsequent flap revisions essential

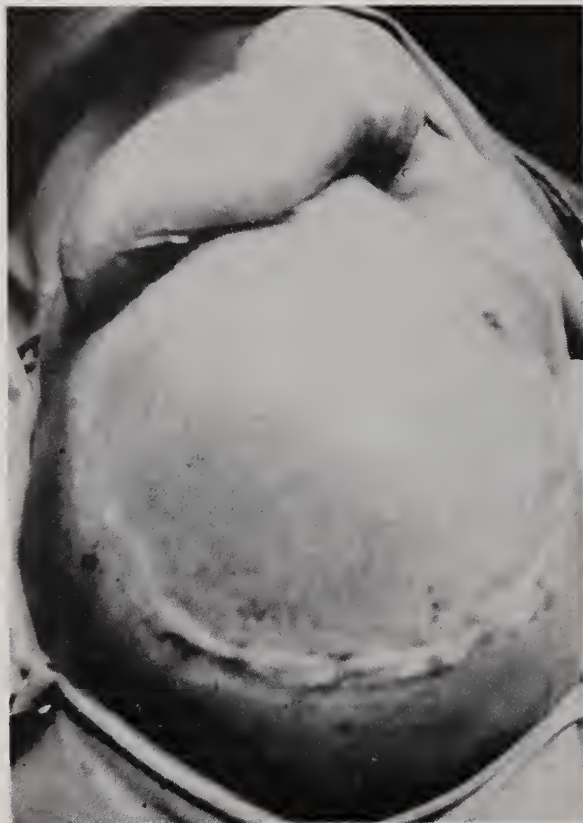


Fig. 10. Lined flap transferred to nose. Scalp donor site covered with split graft. Photograph taken at time of flap division.

for nostril and columella construction, often require multiple procedures extending over a protracted period of time. The repeated operative procedures with prolonged total hospital stay magnify the morbidity, expense and inconvenience to the patient. Therefore, any measures which can effectively and safely reduce the magnitude of the resection and subsequent reconstruction is desirable.

Results

Forty-four patients have been treated for cancer of the nose and complications associated with previous inadequate therapy. All patients have been repeatedly evaluated for

recurrences, and functional, as well as cosmetic, results. One patient refused treatment after a histological diagnosis had been established. Two patients refused reconstruction after resection of the lesions. There have been four deaths in this series of 44



Fig. 11. Profile view taken over two years following completion of reconstruction. No evidence of cancer nearly five years following resection and flap reconstruction.

patients: one patient died on the fifth post-operative day following total resection of the nose for an epidermoid cancer of the septum. One patient died three years following an extensive resection for basosquamous cancer involving the hard palate, upper lip and nasopharynx with metastatic cancer in the neck. (This patient was one of the two who had refused reconstruction.) And two patients died two-three years following successful treatment from unrelated causes. Our results are thus based on the completed treatment of 41 patients (Table V). Only one patient was reconstructed with a prosthetic nose.

Results were determined not only on the basis of cancer eradication, but also the

appearance and function of the reconstructed nose.

Table V

RESULTS OF 45* CASES FOLLOWED

Good.....	33
Fair.....	4
Poor.....	1
Refused reconstruction.....	2
Dead.....	4
1—post operation	
1—3 years after from cancer in neck and chest	
2—2-3 years later from unrelated causes	
*One case refused treatment.	

Discussion

The structure of the nose presents certain unique characteristics which possibly explains the many problems so frequently encountered in the treatment of nasal cancers. The skin over the lower 1/3 of the nose is intimately attached to the underlying upper lateral and alar cartilages. Cancers arising in that region often involve the perichondrium of the underlying cartilages. Adequate treatment must eliminate the lesion and yet preserve the normal location of the nostril. Obviously, the use of radiation therapy in the treatment of cancers of the tip of the nose has a very narrow margin of safety. In order to effect a cure, the therapist must deliver sufficient radiation to skin which is scarcely separable from the underlying cartilages. Therefore, radionecrosis of the skin and cartilages is frequently the price to be paid for a method of therapy which has several *theoretical* advantages over surgery. It has been our experience that we often see persistent cancer in pa-

tients who have had sufficient radiation to totally destroy all or part of the tip of the nose. Another obvious deterrent to the use of radiation in these patients is that often cancer is induced in areas far removed from the area under treatment.

Temporizing, inadequate surgical procedures are equally as undesirable as radiation. Perhaps the prominent location of the nose and its importance to the personality of the patient are compelling factors. Harassed by the concern of producing a deformity which is not only discrediting to the surgeon, but of major importance to the patient, an inadequate excision of the cancer is performed. Regardless of the extenuating factors, the end result is essentially the same. The surgeon who first treats a cancer has the best opportunity to effect a cure. The treatment of nose cancer is in no way different.

Our results indicate that small cancers of the nose, regardless of their location, can be cured by simple excision with primary closure. Further review apparently proves that there is a direct relationship between the complexity of the final definitive therapy and the number and frequency of previous inadequate methods of treatment. It is hoped that this presentation will encourage early, adequate surgical excision as the treatment of choice in all patients with cancer of the nose.

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The Management of Respiratory Paralysis

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A knowledge of the physiology of respiration, properly applied, is necessary in dealing with respiratory paralysis.

ADVANCES IN SURGICAL TECHNIQUE in the last twenty years, particularly in the field of thoracic surgery have been due, in large measure, to improved methods of controlled ventilation. The application of increasing knowledge of respiratory physiology has minimized the anesthetic risks. Unfortunately, the mortality of patients suffering from potentially reversible neurogenic respiratory paralysis remains relatively high.⁴ There are several reasons for this discrepancy. The patient undergoing thoracic surgery does so after careful planning by an experienced team and the operation takes place at a time and place designated in advance. The patient does not usually arrive as the result of an emergency. Respiratory paralysis due to disease of the nervous system, however, may occur anywhere at any time of day or night and is handled in the first instance by persons not trained in the special care of such an emergency. Diseases which frequently require the institution of respiratory support include poliomyelitis, polyneuritis, high cervical injuries, tetanus, myasthenia gravis, poisoning by narcotics, carbon monoxide, anticholinesterase insecticides, and severe electric shock. Most hospitals are not equipped to cope efficiently with such emergencies especially as these are not of common occurrence. Transportation of these patients to

a respiratory unit where special facilities exist is a dangerous and sometimes fatal experience.

This paper is prompted by the fact that the principles underlying the care of the patient with respiratory paralysis are simple and that the observation of these principles will significantly reduce mortality. These principles consist of (1) the maintenance of a clear airway and (2) the movement of air through this airway, either naturally or mechanically.

There are two chief methods for maintaining prolonged assisted respiration.¹⁰ These are the "tank" respirator and intra-tracheal positive pressure.

The Principle of the "Tank" Respirator

This machine normally accommodates a patient in the supine position, the head and part of the neck of the patient projecting through the front of the respirator, sealed off from the inside by an adjustable collar. A bellows attached to the cabinet by a hose evacuates air from the interior of the cabinet at each stroke with the production of a negative pressure within the cabinet. The patient's upper airway is at normal atmospheric pressure and his body is surrounded by a relative vacuum and it is in this way that air enters the lungs so long as the airway is not obstructed. The air entering the lungs expands the chest and produces descent of the diaphragm. At the end of inspiration, the bellows are compressed, the air returns to the cabinet and when atmospheric pressure is restored to the interior of the cabinet expiration takes place. The pressure within the cabinet can be regulated by means of valves, the usual negative pressure required for adequate ventilation, ranging between -12 and -20 cm. of water.⁷

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Intra-tracheal Positive Pressure Respiration^{2,3,4,8}

The positive pressure respirator delivers air under positive pressure directly into the trachea. The principle of these machines is the compression of a bellows which delivers air under a pressure greater than atmospheric, thereby inflating the lungs, the inflation again producing expansion of the chest wall and descent of the diaphragm. At the end of the inspiratory cycle, the pressure returns to atmospheric and expiration takes place. As a rule the positive pressure delivered does not exceed 15 to 20 cm. of water. The phases may be time-cycled, volume-cycled or pressure-cycled. The intra-tracheal positive pressure method of artificial respiration has many advantages over the cabinet respirator. The volume of air administered at each inspiration and the pressure at which it is delivered can be varied independently of each other, which is not true of the cabinet, where increased volume can only be administered as a result of increasing the pressure. Thus, more adequate ventilation and removal of CO₂ can be accomplished. When a spirometer is included in the circuit, it is simple to monitor continuously the amount of ventilation which the patient is receiving. Pulmonary and pharyngeal secretions are easily controlled and the patient can be nursed in virtually any position. Physical therapy, chest percussion and postural drainage are simplified. All nursing procedures and radiologic procedures are simplified because the patient is nursed in an ordinary bed. The author has found the most satisfactory machine to be the one which delivers a preset volume of air, whose action is time-cycled, and which possesses a safety valve for the blowing off of excessive pressure, a valve whereby the patient's efforts add air from the outside, a humidifier and, on the expiratory circuit, a spirometer. Though it is not essential, a negative pressure attachment is valuable particularly when the patient has emphysema. The Engström res-

pirator (Mivab Elektro-medicinska Apparat, Stockholm, Sweden) used in the University of Virginia Hospital meets these requirements and to our knowledge there is no machine manufactured in this country at the present time which possesses the Engström's versatility. While it is desirable to use a machine which delivers a measured volume of air with great efficiency and safety, positive pressure ventilation may be administered indefinitely with nothing more than a bag from an anesthetic machine connected to an oxygen cylinder.

The Differences Between Artificial and Spontaneous Respiration⁸

During normal spontaneous respiration, the lungs fill because of the 1 to 2 cm. of water pressure differential between the atmospheric air and the alveolar pressure. Similarly during expiration, the alveolar pressure rises a few centimeters of water above the atmospheric pressure. During positive pressure artificial ventilation, the alveolar pressure rises from atmospheric to perhaps 18 cm. of water and falls to atmospheric pressure during expiration. The intra-pleural pressure during inspiration then is positive which is a deviation from the normal physiological state of affairs. Theoretically this would be expected to interfere with venous return and thence cardiac output, but in fact, in a normal cardiovascular system, there is rapid compensation for this by a rise in peripheral venous pressure. There is presumed to be some interference with pulmonary blood flow as the pulmonary capillaries are compressed when the alveolar pressure rises above atmospheric. A real danger exists of damage to the lungs if the pressure at which air is delivered into the trachea rises above safe levels and even when it is thought to be within safe levels, damage can occur when parts of the broncho-pulmonary tree are blocked with secretions and the whole head of pressure is delivered to a small portion of the alveolar population. It is this uneven ventilation which is probably of greater risk

than the actual pressure delivered into the trachea. Any undue rise of pressure is noted on the inspiratory gauge and this usually signifies airway obstruction. The Engström respirator is equipped with a safety water lock which prevents the build-up of undue pressure. To reduce the cardiovascular effects mentioned above, the respirator should be so regulated that inspiration is shorter than expiration and the dead space should be small thereby reducing the necessary tidal volume and thus, peak intrapulmonary pressure. A negative pressure device may be applied during the expiratory phase which helps to speed up the fall in pressure in the lungs during expiration and increases the venous pressure gradient at that time.

Selection of Patients for Respiratory Assistance

In any of the diseases mentioned above, the physician should be on his guard for early signs of respiratory failure, particularly in the case of poliomyelitis or polyneuritis, when weakness of the arms and shoulders develops.⁷ It is especially in these cases that respiratory paralysis is likely to occur. Long before any clinical evidence of cyanosis is present, there may be very defective respiratory excursion. Poor oxygenation of arterial blood may well be preceded by massive carbon dioxide retention, especially when the patient is receiving oxygen. A rise of blood pressure, a hot flushed moist skin, increase in bronchial secretions and tachycardia are early signs of carbon dioxide retention and restlessness, dilatation of the nostrils on inspiration, rapid shallow breathing and cyanosis, the manifestation of hypoxia. Insomnia may be an early symptom. The chest moves poorly with contraction of accessory muscles of respiration, and diaphragmatic weakness is indicated by failure of the epigastrium to rise during inspiration. When the diaphragm is strong and the intercostal muscles are weak, chest retraction occurs during inspiration. Patients who are suspected of developing respiratory failure should have vital capacity

and minute volume estimations with a spirometer and it is usual to institute respiratory assistance, when the vital capacity falls to 40% of the normal estimated value. Where a spirometer is not available a falling vital capacity may be deduced by progressive inability to count far in one breath. The patient takes the maximal inspiration and the examiner begins to count a slow steady rate, beating time with the finger, while the patient slowly lets the breath out. A decrease in count indicates a falling vital capacity. The patient should receive respiratory assistance before he becomes restless as he will adapt to the respirator very much more easily. At this stage, the patient's confidence and cooperation are all important.

Selection of Respirator

All patients who suffer with weakness of the bulbar as well as respiratory musculature require a tracheotomy. When a tracheotomy has been performed positive pressure respiration is easier, safer and more convenient and is therefore the method of choice.³ A small group of patients, usually suffering with poliomyelitis, have impaired respiration without involvement of bulbar musculature and continue to be able to handle their secretions and to swallow. These patients can be adequately treated in a cabinet respirator and probably constitute the only group of patients in whom this method of respiration is preferable.

Indications for Tracheotomy

All patients in whom the decision has been made to employ assisted respiration and who show signs of bulbar involvement such as facial weakness, difficulty in phonation, dysarthria, difficulty in swallowing or nasal regurgitation require tracheotomy. This applies also to patients who develop bulbar muscle weakness while in a cabinet respirator and to those who suffer with bulbar paralysis and respiratory weakness, who do not require artificial respiration, but in whom a clear airway cannot be maintained despite postural drainage.

Tracheotomy should never be undertaken as an emergency procedure.^{4,10} In the emergency situation, an endotracheal tube should be inserted and tracheotomy performed in a calm and considered manner without panic. This can be done, once an endotracheal tube is in place and the patient is receiving assisted respiration. The tracheotomy tube should be equipped with an inflatable cuff and either a silver or a rubber tracheotomy tube is satisfactory.

Care of the Tracheotomy

After the first forty-eight hours, granulation tissue forms a track eliminating any difficulty in changing the tracheotomy tube. Should it prove necessary to change the tube prior to forty-eight hours, measures must be at hand for immediate formal laryngeal intubation. There are several dangers inherent in the tracheotomy tube including kinking of the tube, obstruction by granulation tissue or secretions, entry into the right main bronchus with collapse of the left lung, and over inflation of the cuff. The cuff should be tested before use for uniformity of the balloon, the presence of any leaks and weakness in the balloon producing a herniation and possible obstruction of the lumen of the tube. The tracheotomy tube should be lubricated with a preparation of glycerine or castor oil, which do not affect rubber. The cuff should not be over-inflated since further expansion of the cuff occurs as the air within assumes body temperature. When the tracheotomy has been in situ for lengthy periods of time, the cuff should be deflated every six hours to reduce the danger of tracheal mucosal ischemia and ulceration, and re-inflated after suction. During this procedure the patient's head should be depressed. Aspiration of secretions is best done before and after changes of posture, chest percussion and physical therapy and at other times if auscultation over the chest or the tracheotomy indicates their presence. Excessive suction pressure is avoided by the use of a Y-piece in the rubber tubing to apply suction at the optimum moment and

for the minimum time, thus avoiding undue vagal stimulation and removal of air from pulmonary alveoli. Care should be taken not to damage the tracheal and bronchial mucosa with the catheter tip and the size of the suction catheter should be such that there is plenty of room between it and the trachea or the negative pressure might otherwise result in atelectasis.

Adequate humidification of the inspired air is essential as the tracheotomy eliminates the humidifying surfaces of the nose and pharynx. Without humidification, mucus plugs form and tend to dry into crusts which cause obstruction in the bronchi or in the tracheotomy tube. Atropine should not be given because this drug tends to dry secretions and form tenacious plugs. Bronchoscopy usually increases the secretions and one is frequently worse off afterwards than before.

Management of the Patient in the Respirator

On first commencing assisted respiration, the patient may have difficulty in synchronizing with the respirator. If the patient's efforts are out of time with the respirator, more harm than good will result and if he cannot be instructed on the timing of his efforts, or if the patient is mentally confused with some remaining respiratory power and "fights the machine", he should be adequately sedated. Once the patient is receiving respiratory assistance, sedation need not be withheld as any further respiratory depression is immaterial. In the author's experience, sedation with a Demerol and Phenergan mixture is both safe and efficacious. Ventilation requirements can be estimated by means of nomograms and though these are useful as approximate guides of the patient's requirement, frequent estimations of tension of carbon dioxide in arterial blood, arterial blood oxygen saturation, and pH of the arterial blood are necessary.^{1,5} The plasma bicarbonate is of considerable value in checking over- or under-ventilation. A high carbon dioxide combining power and

a lowered blood pH are found in under-ventilation. When the tidal volume has been selected it is still necessary to insure that this volume is transferred to the patient's lungs and for this reason it is necessary to measure the expired volume by means of a spirometer. In the absence of the facilities for performance of blood gas estimations it is generally considered better to over-ventilate the patient slightly, rather than to under-ventilate. Under-ventilation tends to further compromise the already damaged cells in the brain and spinal cord. It will rarely be necessary to administer oxygen as the only effective treatment of under-ventilation is an adequate tidal volume and a clear airway.

Competent medical staff should be continuously in attendance to correct any complications that may arise and to render psychological support to a patient who is probably alert and very frightened. An anesthesiologist should be present at all major manipulations and be responsible for the maintenance and operation of the equipment. Detailed observations should be made periodically. Blood pressure and pulse should be recorded half hourly thus giving clinical evidence of any early departure from normal, especially in the early stages of hypo-ventilation where the rise of blood pressure with slowing and irregularity of the pulse may indicate mild anoxia and CO₂ retention. The temperature should be measured four-hourly indicating the response to any infection. The urine should be tested daily, indicating the response of the kidneys which play a major part in helping to maintain the blood pH within normal limits. Blood examination should be conducted at intervals, as required, especially the CO₂ blood tension and the blood pH. Essential to aid the nursing staff and medical personnel in the management of the case is a chart on the wall in the patient's room, for entering such details as dosage and time of administration of drugs, times for change of posture, percussion, and aspiration, instructions for dealing with a respiratory emergency,

time and nature of physical therapy, nutrition and intravenous therapy, and the results of urine, blood, and chest x-ray examinations.

Nutrition and Fluid Balance

The unconscious adult patient requires a minimum of three litres of fluid daily to replace loss particularly from the respiratory tract. Fluids are given every two hours through a naso-gastric tube. Electrolyte estimations are performed frequently. Intermittent positive pressure respiration causes changes in hepatic blood flow and in prolonged cases there is lowering or reversal of the albumin/globulin ratio. An increase in the breakdown of tissue protein frequently causes an excess of urea formation.

Complications Which May Occur

Inadequate respiratory exchange might be due to insufficient ventilation due to defects in the dosing valve or leaks in the apparatus. Therefore, a spirometer on the expiratory circuit should be consulted periodically and the value of the pulmonary ventilation per minute compared with the expected normal, which under basal condition is 3.5 ± 0.4 litres per minute per square meter of body surface. Respiratory obstruction may be due to kinking of the tracheotomy tube, herniation of the cuff, secretions blocking the tube or broncho-spasm. During broncho-spasm, it might be impossible to get any respiratory exchange at all and the mechanical respirator should then be disconnected because of the risk of high pressure developing in the bronchial tree. Manual inflation using a high oxygen concentration is the best treatment for broncho-spasm. Pulmonary collapse may be due to blood or plugs in the tracheo-bronchial tree and occasionally to one-lung ventilation if the tube slips into one or other main bronchus. Treatment of collapse is by posture and aspiration of secretions, physical therapy and antibiotics. Mediastinal emphysema may occur in a tracheotomy with intermittent

positive pressure and is usually associated with respiratory obstruction. The excessive positive pressure may lead to the rupture of the mediastinal pleura and the development of a tension pneumothorax, which should immediately be treated by bilateral underwater intercostal drainage. Hyperventilation should be avoided especially in prolonged treatment when a marked fall in CO₂ tension in the blood tends to promote cerebral vaso-constriction. Muscular hyperirritability and the development of a Chvostek sign occur during hyperventilation.⁵

With prolonged immobilization, renal calculi frequently become a severe problem especially if urinary tract infections occur and if an metabolic alkalosis is allowed to develop. Attention to pH levels, avoidance of urinary infections, especially if the patient has to be catheterized, and frequent changes of position help to reduce this complication.

Weaning the Patient From the Respirator

In most cases of neurogenic respiratory paralysis, the patient requires respiratory assistance for long periods of time, extending to weeks or months. He becomes very attached to the respirator and tends to resist efforts to reduce this dependence. It is often difficult to judge whether the panic experienced on removal from the respirator is due to apprehension or to under-ventilation with resultant anoxia. If on removal from the respirator, the patient is able to count to less than 10 in one breath, he is probably unable to stay out of the respirator for longer than fifteen minutes and if he can count only to five, he probably cannot remain without assistance for longer than a minute or two.⁷ Measurements of vital capacity will aid in making a more accurate assessment. However, it should be remembered that a patient who receives respiratory assistance for weeks or months may be able to stay off the respirator for long periods of time with a vital capacity as low

as one-fourth of the normal estimated vital capacity. At first, the patient should stay off the respirator for short periods of time and these may then be gradually prolonged. When the diaphragm and intercostal muscles are severely paralyzed, the patient depends very largely on accessory muscles of respiration and since these are brought into play by voluntary effort, respiration may compensate during sleep and the patient may require continued assisted respiration during sleep. In a patient who remains chronically under-ventilated the danger of sudden decompensation exists and the most frequent cause of this is a respiratory infection. In this case, resumption of assisted respiration may become urgently necessary. The use of a rocking bed, is often a valuable adjunct during the stage of weaning from the respirator, the patient receiving respiratory assistance by the mechanical process of continually rocking from a 20 degree head-down tilt to a 20 degree head-up tilt. Some patients become transiently nauseated by this, but the majority tolerate it for many hours at a time.

Transport to the Hospital

One of the most critical periods during the patient's illness is his transportation to the hospital, or from the receiving hospital to the respiratory unit. When a respiratory unit is available, it is tempting to transport such a patient there as quickly as possible. Such a decision is often attended with disaster. The patient who has even mild respiratory paralysis may become severely ill on such a journey and the establishment of an airway or the treatment of respiratory paralysis or aspirated vomit is not carried out to best advantage in an ambulance. The patient with respiratory and bulbar weakness should therefore, in most cases, be intubated with a cuffed aspiration-proof endotracheal airway and respiration may then be maintained on the journey with an anesthetic valve and bag connected to an oxygen cylinder or with a battery-powered positive pressure machine. Facilities for

suction should be present in the ambulance undertaking the journey and the patient should be adequately sedated. No patient should ever be transported without a medical attendant and under ideal circumstances a "respirator team" should be furnished by the respiratory unit to supervise the patient's transport.^{4,10}

It will be seen from these recommendations for the management of a patient with respiratory paralysis that a teamwork approach to these problems is desirable and every respirator unit should comprise a team consisting of a neurologist, an anesthesiologist, an ear, nose and throat surgeon, and a physical therapist. Such a team operating together rapidly learns to treat respiratory paralysis as a routine rather than a crisis. It can further be seen, however, that so long as the means of administering artificial ventilation are at hand, patients with respiratory paralysis can be intelligently treated in even the smallest hospital if the two basic concepts are adhered to, namely the maintenance of a clear airway and adequate ventilation through this airway. If need be, such ventilation can be continued for indefinite periods of time with the bag from an anesthetic machine and it is only after these life saving measures have been taken that consideration should be given to the transport of the patient to a respiratory unit. Such transportation may then be accomplished with safety by road, rail, or air.

Summary

The principles and practice of the care of patients suffering from respiratory paralysis are reviewed.

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Thrombophlebitis

Prevention, Diagnosis and Management

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The calamity of sudden death from pulmonary embolus has become less frequent. Among measures responsible are those designed to prevent or control thrombophlebitis.

AMONG THE VARIOUS CIRCULATORY DISORDERS, venous occlusion attributable to intravenous thrombosis appears to be one of the most prevalent. When it occurs without embolic complications it often results in protracted disability and loss of time from work. When the condition gives rise to pulmonary embolism a fatal result often ensues with catastrophic suddenness.

For many years the term thrombophlebitis was universally used as a designation which encompassed the phenomenon of intravenous thrombosis including the changes in the perivenous tissues associated with it. During more recent times the term "phlebothrombosis" has come into steadily increasing usage. The distinction between these two terms appears rather fine. Thrombophlebitis has been defined¹ as "partial or complete occlusion of a vein by a thrombus with antecedent or secondary inflammatory reaction in the wall of the vein." Phlebothrombosis, according to Ochsner and De-

bakey² is the initial stage in which "the intravascular thrombus formation is due to venous stasis and to alteration in the cellular and fluid constituents of the blood that increase the clotting tendency." The difference appears to be in the presence or absence of inflammatory reaction; "phlebothrombosis" constituting the pre-inflammatory phase of the disorder and "thrombophlebitis" the inflammatory phase. Phlebothrombosis unquestionably progresses to thrombophlebitis in the majority of cases. However, in the author's experience some patients have an exceptional ability to "lyse" blood clots and in these individuals recanalization of the venous channel permits resolution of the process without development of inflammatory change.

Etiology

Thrombophlebitis may be classified as (a) primary when there is no known local or precipitating cause (b) secondary, when it occurs as a complication of operation, delivery, or systemic disease (c) local, when it develops as a result of damage to the vein wall.

Primary thrombophlebitis may occur as a single episode or more rarely as recurrent idiopathic thrombophlebitis. Secondary thrombophlebitis arises as a complication of a variety of conditions, abdominal or pelvic surgery, labor, severe injury remote from the area of thrombosis, blood dyscrasia, cardiac disease and infectious disease. Adrenocortical hormones also appear to be a causative factor in some instances. Local thrombophlebitis occurs in association with direct injury, varicosities, adjacent infections and chemical irritation produced by intravenous medications.

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The etiologic factors involved in thrombophlebitis have been the subject of much controversy. The three major factors which have received consideration are (a) damage to the vein wall (b) hypercoagulability of the blood and (c) venous stasis. By definition, the first-mentioned factor is the prime cause of local thrombophlebitis. It has not, however, been proven a factor in primary or secondary thrombophlebitis. In secondary thrombophlebitis hypercoagulability of the blood as a predisposing cause seems probable but has not been conclusively demonstrated. Nevertheless, from the practical standpoint prophylactic usage of anticoagulants appears without question to reduce the incidence of thrombosis. Similarly, avoidance of venous stasis by ambulation or exercise also seems a valuable preventive measure.

Diagnosis

The signs and symptoms of thrombophlebitis are both systemic and local. Those of phlebothrombosis are purely local and generally more difficult to detect.

The systemic symptoms of acute thrombophlebitis include malaise, generalized aching and fever; the last generally being moderate in degree with the highest temperature recorded in the evenings. The local symptoms include pain, tenderness and swelling. These naturally, vary in degree with the severity of the condition and the depth within the limb of the involved veins. When the vessels are superficial the inflammatory reaction is apparent as a slightly raised, reddened area, often linear in shape. The thrombosed vein may be palpable as a tender, firm, cord-like structure. When deeper vessels are involved external signs of inflammation are reduced or lacking and deep muscle pressure is required to elicit tenderness. Edema, cyanosis or alteration of temperature of the limb are not usually present unless a large vessel is involved.

Phlebothrombosis occurs most frequently in the deeper vessels. Tenderness on deep pressure can usually be elicited but evident inflammatory change cannot be detected.

A positive Homan's sign or Lowenberg test will help to confirm the existence of phlebothrombosis or thrombophlebitis but will not distinguish between them. Homan's sign is elicited by dorsiflexion of the foot of the affected limb. If pain is felt in the calf the sign is considered positive. The Lowenberg sign is elicited by placing a sphygmomanometer cuff on each calf and then slowly raising the pressure to 100-140 mm. Hg. In the presence of deep vein involvement this will cause the patient to complain of severe pain. In the author's experience negative response to these tests is a reasonably reliable indication that there is no deep venous thrombosis. However, in his experience a positive result may be obtained in a variety of conditions in which muscle sensitivity is increased. Hence, these tests should be regarded as confirmatory rather than specific. A more specific test frequently employed by the author is the intravenous administration of 50 mg. of heparin. In the presence of thrombophlebitis there is almost invariably immediate, though temporary, relief of pain in the calf.

Pulmonary embolism, it should be noted, most frequently occurs before any local symptoms have become evident, probably during the phlebothrombotic stage rather than during the later thrombophlebitic phase. Other sequelae of widespread thrombosis include chronic venous insufficiency, varicosities, and more rarely, trophic changes in the affected limb.

Prophylaxis

Unquestionably the best treatment of thrombophlebitis involves the adoption of measures designed to prevent its development. Insofar as a large proportion of cases develop in hospital in-patients with conditions known to predispose to its occurrence, the disease lends itself exceptionally well to preventive measures. Indeed, it is believed by the author that perhaps 90 per cent of cases may be prevented by a few simple precautions.

In the surgical patient these precautions

begin in the operating room where careful surgical technic and avoidance of trauma to the lower extremities by pressure or in using them for parenteral medication may substantially reduce the incidence of post-operative thrombosis. In the immediately post-operative period scrupulous attention to the patient's hydration will contribute to the same end.

In all patients at bed-rest with any predisposition to venous thrombosis the foot of the bed should be elevated several inches above the heart-level. This maneuver is believed to be by far the most important single prophylactic measure. Other, but less important precautions include loosening of tight bed linens from around the legs, preferably by use of a cradle or board at the foot of the bed over which the bedclothes may be draped.

The decreased incidence of pulmonary embolism has been attributed to early ambulation. However, the better administration of anesthetic agents, the use of antibiotics and improvement of total care, may have contributed equally, if not more, to this result. Although not opposed to early ambulation the author has frequently noted that the patient compensates for 15-20 minutes a day of ambulation by being more somnolent at bed-rest during the ensuing 24 hours. A device employed by the author consists of instructing the patients to say "hello" to him each time he passes on his rounds by wiggling their toes. This maneuver involves more repetitive exercise with less tendency to produce fatigue.

These simple precautions, it is believed, are superior to pressure bandages or elastic stockings, both of which have certain disadvantages. Elastic supports require expert application and frequent readjustment. Moreover, they may even tend to incite thrombosis by producing edema of the foot or by creasing at critical points such as the popliteal area. In any event, because venous structures in the thigh are so hard to support, elastic bandaging above the knee is never recommended except perhaps where

previous ligation or stripping has been performed in the upper thigh area. Even in these cases the support should be removed and reapplied frequently during the period of use.

Another relatively simple and practical means of preventing thrombophlebitis in patients with a predisposition to the disorder is the administration of phenylbutazone (Butazolidin). This agent is of greatest usefulness in post-operative and post-partum patients. The efficacy of the drug in inhibiting perivenous inflammation associated with venous thrombosis has been demonstrated both in the experimental animal and in man by Stein³⁻⁵ and its clinical usefulness has been corroborated by other workers.⁶⁻⁹ In the author's experience phenylbutazone administered to selected patients for short periods of time markedly lessens post surgical pain and inflammatory reaction and is instrumental in preventing thrombophlebitic complications. Wherever there is a history of post-operative or post-partum thrombophlebitis it may generally be employed to advantage. Because the dosage requirement is moderate and the period of treatment brief, toxic reactions from the use of the drug in this indication are exceedingly rare. Nevertheless, the physician should, of course, observe the usual precautions with this agent and examine the patient regularly during treatment.

Treatment

Once the diagnosis of thrombophlebitis is established anticoagulant treatment should be immediately instituted. In the majority of cases heparin, by the intravenous or subcutaneous route, is the drug of choice. In severe cases with massive involvement of the venous system fibrinolysin should be administered in conjunction with heparin. Heparin is by far the safer and more easily controlled of the two drugs. Given by vein every four hours in a dose ranging from 50 to 75 mg., it usually prevents extension of the original thrombus and causes noticeable amelioration of inflammation within 24-48 hours. The

drug is effective immediately upon administration by vein or subcutaneously and its effect is sustained for 1½-3 hours after intravenous administration and for 6-16 hours after subcutaneous administration. Size and frequency of dosage are controlled by determining clotting time by the method of Lee White, the tests usually being done at 2-3 hour intervals when giving the drug intravenously and at 6-8 hour intervals after subcutaneous administration. Complications are usually limited to hemorrhage phenomena which are infrequent, and when they do occur are readily controlled by intravenous protamine, in a unit dosage equivalent to that of the previously administered heparin.

Once initial subjective and objective improvement is secured, a transition may be made from heparin to oral anticoagulants. The transition should be gradual, with heparin (in decreasing dosage) being continued for at least 72 hours after the institution of oral anticoagulant therapy. Among the oral anticoagulants warfarin (Coumadin) and phenindione (Hedulin) are favored because they produce rapid prolongation of the prothrombin time and yet facilitate relatively easy maintenance within the therapeutic range. A prothrombin level of 20-30 per cent of normal is usually considered adequate. Regardless, however, of the prothrombin time achieved, the full therapeutic effect of the oral anticoagulants is not achieved for approximately five days. During this period the patient is not entirely safe from rapid spread of thrombosis or embolization and hence requires the continued protection afforded by heparin.

When the thrombophlebitic process in-

volves the superficial veins phenylbutazone is the drug of choice to secure rapid subsidence of inflammation. Other workers have obtained most successful results using this drug alone without the aid of anticoagulant agents. It may, however, be used in conjunction with oral anticoagulants provided it is borne in mind that it enhances the hypoprothrombinemic effect of these agents, which therefore must be used in lower dosage than when employed alone. In those cases serious enough to warrant usage of fibrinolysin it has been the author's impression that simultaneous use of phenylbutazone has inhibited some of the untoward reactions, notably fever and malaise, often induced by fibrinolysin. Phenylbutazone has also been found useful in some of the complications of venous incompetence, most notably inflamed and infected varicose ulcers.

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Dermatitis of the Nasolabial Folds

An Unusual Skin Disorder

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A peculiar dermatosis of the nasolabial folds, with frequent involvement of the chin, upper lip and nose, is described.

THIS IS A PRELIMINARY REPORT on an unusual, and remarkably consistent disorder of the face, differing in a number of ways from those with a similar distribution. It is believed that this experience is of particular interest.

Clinical Aspects

During the past year, seventeen white females, aged 11 to 74 years, presented themselves with an eruption characterized by intense, non-pruritic erythema, faint scaling, and occasionally, discrete and con-



Dermatitis of the nasolabial folds in a 44-year-old woman, showing involvement of malar areas, forehead, chin, nose, and relative circumoral pallor.

fluent papule formation distributed to the nasolabial folds, upper lip, chin, nose, and infrequently the forehead, and malar areas. The regions immediately adjacent to the lips were often spared, causing a relative circumoral pallor. This eruption was sudden in onset and remained stationary after reaching a maximum spread in two or three days. The patients sought relief from the cosmetic aspects of the disorder.

The history was barren of specific causal factors in all cases. Contact factors were unimpressive. Frosted nail polish was suspected in two cases, but the patients recovered while continuing its use. No history suggestive of light sensitivity could be elicited. Demodex folliculorum was found on routine scrapings in only two patients. Although one patient used creams exclusively for cleansing the face, the others used soap, water, and cleansing creams.

Emotional factors were prominent. One patient had undergone psychiatric treatment. One, an eleven-year-old girl, had an associated alopecia areata. Three patients had a background of strong situational tension factors.

An associated seborrhea was found in only two of these patients and acne in one. Three of the seventeen patients had a previous history of pityriasis rosea. In most cases, the onset of the eruption occurred in December or July, an observation of doubtful significance.

A number of the patients had a previous or concurrent eczematous dermatitis, classified as atopic dermatitis in three, nummular eczema in one, dyshidrosis in two. Six patients had neither psychologic nor atopic factors in the background.

Twelve patients were experiencing their

first episode of four months' duration or less. Five patients had had remissions and exacerbations of the eruption over a period of two years or less.

Differential Diagnosis

Differential diagnosis includes seborrheic dermatitis, contact dermatitis, especially to nail polish and other cosmetics, rosacea, and light-sensitive dermatoses, including lupus erythematosus.

Response to Therapy

All patients were treated with one capsule daily of tetracycline phosphate complex* (equivalent to 125 mg tetracycline HCl, and 25 mg amphotericin B), and a corticosteroid ointment consisting of either flurandrenolone 0.05%, or triamcinolone acetonide 0.1% cream, each diluted 1:10 in a hydrophilic ointment base[†] to which had been added neomycin and bacitracin. Two unusually intense cases were treated additionally with compresses of a saturated solution of boric acid. The use of soap and water was permitted in the others. All patients but one cleared rapidly and promptly on this regimen, usually within seven days. One case eventuated into typical seborrheic dermatitis of the face and scalp, which continues with exacerbations to the present. Corticosteroid creams were used topically because the first two patients seen in this series gave a history of aggravation by the application of compounds containing sulfur and resorcin. Their experience evoked memories of a small number of comparable cases seen over the past 15 years, classified as seborrheic dermatitis, in which the invariable result was irritation caused by topical medication containing sulfur and resorcin.

Comment

An attempt to find reports of similar cases has been unsuccessful. The cases re-

ported in this communication are closest to those described by Ayres,¹ which he attributed to *Demodex folliculorum*. This parasite appears in the hair follicles, sebaceous glands and ducts of nearly all adults. Ayres considered that the parasite was facultatively pathogenic under conditions where creams were used for cleansing and make-up purposes, to the exclusion of soap and water. He treated his patients with soap, water, sulfur and ammoniated mercury ointments. Although *Demodex* was found in only two cases in this group, undoubtedly the parasite could be demonstrated in others upon more intensive search.

Summary and Conclusions

A peculiar dermatosis of the nasolabial folds, with frequent involvement of the chin, upper lip, nose, and less frequent involvement of the forehead and malar areas is described. There was a narrow zone of relative freedom surrounding the lips. Contact factors, light sensitivity, and *Demodex folliculorum* seem to be excluded as causal agents. Seborrheic dermatitis and acne were seldom associated with the disorder. Psychologic factors were prominent in the background of five patients. Six patients had a preceding or accompanying atopic or other type of eczematous dermatitis.

Treatment with topical corticosteroid ointments and tetracycline orally usually accomplished rapid resolution of the eruption.

The cause of this dermatosis is unknown. Is this a clinical variant or a separate syndrome? It is suggested that this is a variant of atopic dermatitis. Its significance lies in its distribution, principally to the nasolabial folds; and in its similarity to seborrheic dermatitis, contact dermatitis, and light sensitive dermatoses.

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† Unibase® —Parke, Davis & Co.

Deafness and the Communicable Diseases

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The author feels that communicable diseases, especially mumps, often cause deafness.

MORE FREQUENTLY than is generally realized, deafness* is caused by contagious disease. This paper deals with relationships of these diseases: first to conductive deafness, and then, to perceptive or nerve type deafness which thus far has been relatively immune to medical treatment.

Although the literature frequently refers to disease as a cause of deafness there is a modicum of material dealing specifically with the relationship of communicable diseases to loss of hearing. In practice, intradermal tests with material containing mumps virus have shown a specific hypersensitivity for varying lengths of time. According to Enders¹ this test shows that in about one in every three cases, the past infections are subclinical. The group tested consisted of young adults. Kjer² reports three cases of deafness which he felt were due to meningeal involvement, probably basal, secondary to mumps. He feels that some cases of deafness due to central nervous involvement by mumps may occur even when there is no glandular swelling. Lucchesse and LaBocetta³ state that central nervous system involvement occurs at the height of mumps and may occur as "cerebral mumps" without clinical evidence of salivary gland disease.

*Deafness, hard of hearing, loss of hearing, and hearing loss are used synonymously in this paper to indicate loss, lack, or impairment of the sense of hearing.

Conductive Deafness

A marked reduction in the incidence of conductive deafness due to middle ear complication has been wrought in this era of chemotherapy and antibiotics. Further refinements in their use must be sought and employed. Use of these modern measures is illustrated by Case 1.

Case 1. Mary, a 14-year-old girl, applied for treatment to relieve an earache. She had a history of influenza at the onset of the ear trouble. Examination revealed severe otitis media and a profound hearing loss. A myringotomy was performed without further delay.

A culture at that time revealed hemolytic staphylococci and streptococci. Antibiotic therapy was begun immediately and continued for three weeks. Due to continual profuse drainage, thirty days after the myringotomy, Mary was hospitalized. Her white blood count was never above 11,000; there was only slight temperature elevation. The patient experienced no toxicity.

In addition to continued slight drainage, there was profound deafness which had not been relieved through incision of the tympanic membrane, and some x-ray evidence of mastoid cell breakdown. Four weeks after onset of the otitis, a mastoidectomy was performed. The culture at operation was sterile. The exudate was gelatinous; no pus was present.

Recovery was uneventful and the patient's hearing returned to normal. In many other cases, otitis media, when treated with antibiotics, without myringotomy, has become a secretory otitis with a sticky sterile secretion where the hearing usually is restored by a simple aspiration.

Perceptive Deafness

Various virus diseases have been reported as causative of perceptive deafness. Our experience has been in agreement with these reports particularly in cases where the disease was contracted by a patient less than two years of age. The degree of perceptive hearing loss may be approximately equal in both ears (bilateral deafness) or, in other cases, there may be considerable difference in hearing. The disease most frequently found in pathological studies of this type of deafness is meningitis. It is generally considered that, in all ages of the present population in the United States, there are at least 7000 cases of perceptive deafness which have been caused by this disease.

Mumps, too, unquestionably cause a high incidence of nerve deafness. Some specialists feel this disease has caused many more cases of hearing impairment than reported. Such opinions are usually based on lack of data on the incidence of this "childhood disease" in the total population, on its frequently subclinical nature, and possibly on an inclination of some physicians to disregard it as a causative factor in deafness. However, mumps probably is the cause for perceptive deafness more frequently than any of the other viral diseases.

Infectious parotitis (mumps) is a filtrable virus disease transmitted by direct contact or by infected droplets of saliva entering the mouth or nasopharynx. It is generally characterized by inflammation of the parotid gland and occasionally also of the submaxillary, submental, pancreas, ovaries, and testes glands. The incubation period, sometimes as long as four weeks, usually is 14 to 21 days. Usual glandular swelling appears in about two days after completion of incubation. Common symptoms such as headache, malaise sense of chilliness, moderate fever, earache, or loss of hearing lead the patient to seek medical aid even before there is any apparent swelling of glands. Where the parotid gland is not affected, clear diagnosis often is difficult. Where there is perceptive

deafness, a thorough case history is likely to show exposure to the disease although there may be no clinical manifestations of its presence.

Since the patient usually recovers, there has been only a modicum of pathological research of this disease. Thus, its pathological process is not thoroughly understood. It is considered by some experts to be a labyrinthine-encephalitis.⁴ Such a diagnosis seems to be supported by data in our files. For example, a woman, aged 35, had tinnitus and vertigo subsequent to typical mumps. Unilateral perceptive deafness followed. Another example is the adult, described below as Case 3, who noticed the advent of tinnitus three weeks after exposure to mumps and shortly thereafter became aware of loss of hearing.

The damage by the viral diseases to the perceptive mechanisms of hearing frequently occurs during fetal development. Rubella (German measles) contracted by a pregnant woman in her first trimester of pregnancy frequently disturbs normal development of the central nervous system areas which are employed in perception or interpretation of sound.

Where congenital perceptive deafness occurs, post infectious encephalitis is usually associated. Fortunately, the other common eruptive diseases only rarely have a complication of perceptive deafness.

Case 2. Joan S., age 6 years, was seen on July 13, 1959. The following history was obtained from the mother. Two years before this visit, while the parents were on vacation they telephoned home to talk to the children. When Joan put the receiver to her right ear, the person staying with the children told her to use the left. Joan replied that she could not hear in the left ear. This was the first time that the parents had considered that the child might have a hearing loss. Two months prior, she had had chickenpox, and two weeks after she had recovered from chickenpox her sister had had mumps. Although generally expected to contract the disease, neither symptoms of

epidemic parotitis nor of other mumps had been observed.

Upon returning home the parents took the child to an otolaryngologist. Audiometric tests showed she definitely had a hearing loss. Shortly thereafter a T and A was performed. Subsequent hearing tests showed the deafness had not been eliminated by the surgery or inflation and her surgeon asked the writer to see the patient.

Diagnostic audiometric examinations showed that hearing in the right ear was normal but there was impairment of hearing in the left ear where perception of bone conducted sound was more acute than was air conducted. (Fig 1) From these findings,

on the right, and a history of tinnitus since Christmas. Diplacusis was also a symptom.*

About three weeks before Christmas 1959, she had taken into her arms a child who had mumps. She had reported this to her physician and as she had never contracted mumps she was given a mumps immunization injection. Just after Christmas she noticed ringing in the right ear.

Upon inflation it was thought that the right ear gave a slight fluid sound. She returned on January 25, 1960. Inflation was dry and normal. It was also apparent that the right ear was the site of deafness below the conversational level.† She was booked for a complete hearing examination on April 21, 1960. The test at that time showed severe perceptive deafness on the right. (Fig. 2) The left ear was normal. The

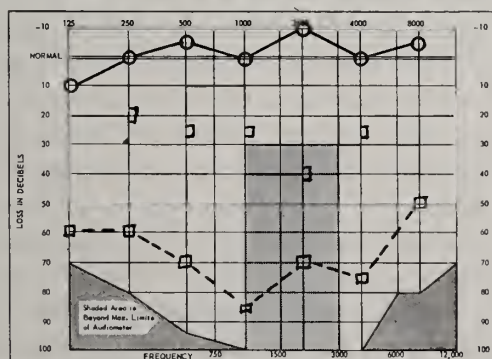


Fig. 1 Joan S. Age 6. Date: 7-13-59

which were verified in repeated tests, it may be deduced that mumps virus involved the labyrinth without clinical symptoms, since mumps is much more commonly a cause of perceptive deafness than of conductive deafness. Joan has a perceptive hearing loss. Very often where the hearing loss is considerably different in the ears, effective masking is difficult, especially in children. The writer believes that this is the correct diagnosis of the child's hearing disease and the literature supports this conclusion. However, study of the case will be continued in order to further validate or negate the rationale on which the diagnosis is based.

Case 3. Mrs. G., age 41, came to the office on January 18, 1960. Her complaints were gradually diminishing hearing on the right side, a feeling of fullness in both ears, worse

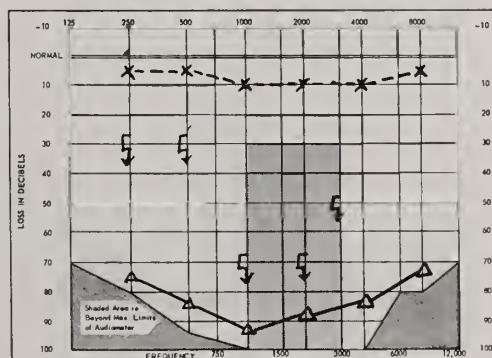


Fig. 2 Mrs. N. G. Age 41 Date: 4-21-60

caloric test showed active response from the vestibular mechanism of both inner ears. The modified Kobrak test was used.

Case 4. Randy, age 6 years, was brought to the office by his mother in search of a remedy for his hearing condition. The history of factors which might throw light on the cause and diagnosis of the ailment was elicited from the mother.

She reported that pregnancy for Randy and his birth were uneventful and normal. Chickenpox, when he was six months old,

*This complaint, which is hearing a sound in the affected ear about one-half tone off pitch, is an indication of involvement of the cochlea.

†This is considered to be 30 to 40 decibels.

was his only communicable childhood disease. About two years before the office visit for the hearing condition, some of his siblings had typical symptoms of mumps and were believed to have contracted the disease. The patient had shown no clinical signs of having the disease. However, the mother recalled that when he was about four and a half years of age, he frequently said, "Don't tell me in this (the right) ear. Tell me in the other (the left) ear". A right ear infection, then considered slight, which occurred when he was quite young had recurred when he was five years of age.

Diagnostic audiometric techniques revealed that Randy had moderately severe perceptive deafness in the right ear. (Fig. 3) Although there is possibility that chick-

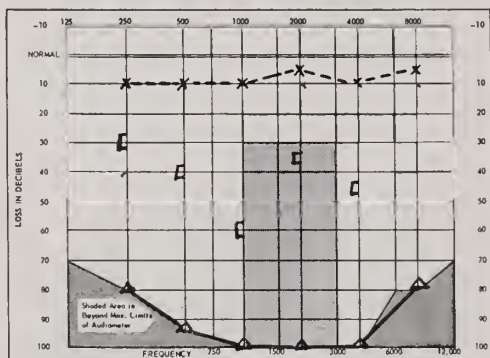


Fig. 3 Randy R. Age 8. Date: 9-30-61

enpox at the early age might have caused the nerve deafness, it seems more likely that the patient had had subclinical infectious parotitis which affected the perceptive mechanism of his right ear.

Summary and Conclusion

This paper has aimed to show definite, though sometimes complex, relationships of deafness to communicable diseases. Four cases which exemplify such relationships have been presented.

The first case, an adolescent girl who has deafness clearly resulting from staphylococci infection, illustrates the masking effect of antibiotics.

The second case is a girl in middle childhood who has hearing loss probably caused

by mumps which merits continued study to further validate or negate the diagnosis of perceptive loss of hearing.

The next case described is an adult woman who has a perceptive hearing loss which resulted from subclinical mumps. However, a vaccination to produce immunity against mumps may have affected progress of the disease. More data on cases with similar conditions will be a professional contribution.

The fourth case is a boy in middle childhood with perceptive hearing loss which probably was caused by subclinical mumps. Study of this case, like Case 2, should be continued to assure that the deafness was not caused by chickenpox.

These cases show that adequate diagnosis of deafness may be a complex professional task which requires a thorough understanding of the typical effects on hearing of various contagious diseases. Subsequent to the diagnostic procedures where the case is considered to be conductive deafness, typical care has been explained in the first case report. In reference to perceptive deafness, at the present state of medical knowledge the principle of prevention must be through vaccination against the causative disease. Even though neuritis does follow some of the immunization injections there is no evidence that this ordinarily would tend toward involvement of the eighth nerve over any other.

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The Disappearance of Pulses after Exercise in Patients Having the Leriche Syndrome

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Since patients with this syndrome may be relieved by vascular surgery, it is urgent that they be recognized.

THE ABILITY OF SURGEONS to relieve vascular obstruction has made the appraisal of pulses in the legs a more important part of physical examinations. When the pulses are absent, it can be assumed that arterial obstruction has occurred unless there is a more conspicuous cause. On the other hand, though the pulses are felt, there also may be significant impairment of arterial blood flow with intermittent claudication.

This paradoxical picture has been the subject of occasional discussion.^{1,2} Failure to recognize it has led to erroneous diagnoses such as sciatica, arthritis, etc. Some persistent pulses beyond an atherosclerotic segment may be barely palpable, others may seem normal, depending on the degree of obstruction and whether the lesion is localized or complicated by distal narrowing as well.

A point of further interest is the complete disappearance of pulses in patients with the Leriche syndrome after exercise. Even pulses of grade 3 or 4 intensity may disappear when the patient walks to the point of having leg pain. The pulses affected can be correlated fairly well with the location of pain, i.e., pedal pulses are involved when calf pain

occurs and both pedal and popliteal pulses are lost when there is hip pain.

Illustrative Case—A 56 year old man was seen complaining of pain and tightness in the gluteal and hamstring muscles on walking one or one and one-half blocks, relieved by resting for about five minutes. This had been present for one month. He had been treated for syphilis and smoked two or three packs of cigarettes daily. The general examination was essentially normal with a blood pressure of 140/85. The femoral, popliteal, and pedal pulses felt normal. A grade II bruit was heard over the right iliac, none on the left. After walking to the point of pain in the left hip, the left popliteal and pedal pulses disappeared completely. The bruit over the right iliac artery increased to grade III or IV with a grade III intensity over the left iliac. A grade II bruit was heard also over the lumbar spine. After resting for five minutes, the pulses reappeared and were of normal intensity. An abdominal aortogram (see Fig. 1) showed the right common iliac to be normal; the left common iliac was faintly opacified and there appeared to be partial occlusion at the orifice. There was no evidence of collateral circulation. One month later the left pulses had decreased in intensity though he had smoked less.

At surgery, there was a partial obstruction of the left common iliac artery with marked decrease (dampening) of pulsations distal to this point. The iliac artery was opened through a small longitudinal incision and the atheromatous plug removed. This endarterectomy procedure appeared to relieve the obstruction, and following closure of the

arteriotomy, a forceful pulsation was palpated in the common femoral vessel. Subsequently, there was no intermittent claudication and the pulses were of normal intensity before and after exercise.

Comment

It has been assumed that vasospasm is responsible for pulses disappearing during



Fig. 1. Abdominal aortogram demonstrating obstruction at the origin of the left iliac artery.

exercise. However, this is unlikely since sympathectomy has failed to prevent either pain or disappearance of the pulses.^{2,3}

Studies^{3,4,5} have shown that in normal individuals exercise produces vasodilatation and increase of blood flow to the muscles being used. Peripheral to this there may be a transient reduction in blood flow. In the arteriosclerotic patient, blood flow to the

muscle during exercise is the same, or increased, but distally the reduction in blood flow is of greater degree than in the normal individual and persists for a longer period of time. It may be concluded, therefore, that reduction or loss of pulses during exercise to the point of claudication in patients with the Leriche syndrome is a consequence of diversion of a compromised blood flow into the dilated vascular bed of the muscles being used, with insufficient blood volume distally to maintain pulses.

Summary

Good pulses may be found in patients with intermittent claudication consequent to aortic or iliac atherosclerosis. These pulses may be made to disappear by exercise, returning after several minutes of rest. The disappearance of pulses during exercise is not from vasospasm, rather a consequence of diversion of a reduced blood flow into a dilated vascular bed.

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Williamsburg, Virginia (Williams)
Allied Arts Building
Lynchburg, Virginia (de Niord)

Psychological Aspects of Aging

One of the most crucial variables in the functioning of any person is his self-concept—the way that he sees himself. Self-concept is a product of many factors and especially so in the older person who has a long history. One aspect of particular importance is the social role that is assigned to a particular person; the image he presents to others will gradually be incorporated into his self-concept. In the traditional Chinese culture, the older person was revered and respected for his wisdom. He made important decisions not only for himself but for his adult sons and his sons' sons as well. He was the head of a several generation household. This was not merely a matter of authority but a reflection of the belief that age produces wisdom. This assumption was probably unjustified since we know that many people fail to learn through experience. Nevertheless, this older person was likely to live up to the ideal as pictured by his society since it was expected of him.

The role of the older person in our society approached the traditional Chinese during the era of the independent farmer and the skilled craftsman. At this time, it took many years to learn these skills and they were taught by demonstration rather than through schools and books. Now we have a lesser need for this type of person. Also with a rapidly changing technology and the expansion of formal education, the older person finds his experience a handicap rather than an asset. We frequently look for the new idea, the new approach and we frequently

WILLIAM J. EICHMAN, Ph.D.

find it in the younger person who is not burdened by traditional solutions to a problem. Thus the older person is often seen as obsolete by his employers, by his peers, and by himself.

This total situation presents a very difficult social and psychological problem. Under these handicaps, the older person is likely to function far below his optimum level of ability whereas, in the traditional culture, he is likely to exceed our expectations. It also presents each of us with a personal problem. We, who condescend to the older person now, will find ourselves in a similar situation very shortly. A wise person has said, "As we treat our parents, so will our children treat us." The attitudes we express toward older people will be learned by the young and be expressed to us when we are in the status category of "old".

As a consequence of the attitudes we have built into our culture, age has become something to be feared rather than to be accepted. The fear and the warped attitudes multiply whatever disabilities occur in physical terms. We do know that physical decline is intimately connected with the aging process but, until recently, this knowledge has been largely superficial and anecdotal rather than the result of sound research. Now, with an increased interest in aging, we are expending millions of dollars in research effort and objective information is slowly accumulating. Utilizing the objective knowledge as it becomes available to us is dependent on our current attitudes. Indeed the direction of research itself and the interpretation of the results is also dependent on our attitudes. If we, as professional and scientific workers, cling to the stereotypes on aging, we will be seriously handicapped in progressing toward an understanding of the process.

EICHMAN, WILLIAM J., PH.D., *Chief, Psychology Service, Veterans Administration Hospital, Salem, Va.*

Approved for publication by Commissioner, Department Mental Hygiene and Hospitals.

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The Use of Screening Tests in the Diagnosis of Hemostatic Defects

From the standpoint of the clinician, the use of screening tests in the diagnosis of blood dyscrasias is of value in pin-pointing the area in which the specific defect lies. Most of these tests can be performed using the services of the interne staff and routine laboratory. Obviously development of hematoma following a direct blow presents little difficulty as far as their etiology is concerned. It is, however, bleeding of a more obscure nature, perhaps spontaneous, that poses a problem from the standpoint of diagnosis.

Hemostasis is effected by three separate mechanisms.

1. The integrity of the vascular wall
2. The platelets
3. The plasma coagulation factors

Considering the first mechanism, that of vascular wall integrity, any break in the capillary endothelium allows the escape of blood with the formation of petechiae or if the vessel is of large calibre, perhaps ecchymoses. Sympathetic nerve stimulation of the latter vessels, *i.e.* arterioles or metarterioles, brings about vasoconstriction if damage occurs but is of minor consequence.

In addition, the liberation of serotonin from the platelets, responsible for providing the second mechanism of hemostasis, causes vasoconstriction with temporary cessation of blood flow. The "clou hémostatique" or platelet plug provides another means of preventing the escape of blood.

Finally adequate levels of factors entering into the three stages of blood coagulation

- a) Formation of thromboplastin
- b) Thrombin formation and
- c) Fibrin formation

are necessary.

Defects in only one area of hemostasis unless severe do not cause bleeding. A combination of any two, for example, a vascular weakness and a plasma coagulation defect, will result in hemorrhage. It is necessary to perform screening tests for each of these hemostatic mechanisms.

- a) Defects of the vascular endothelium are adequately gauged by performing the tourniquet test. A blood pressure cuff is applied and maintained half-way between systolic and diastolic pressure for eight minutes. At the end of this time the whole of the forearm is observed for petechiae and graded as to their density from 1 to 4+. The dorsum of the hand is often found to show more petechiae than the antecubital fossa. The bleeding time, provided it is performed in a uniform manner, may also prove useful in diagnosing defects in this area.
- b) As far as platelets are concerned, a count should be performed and a smear observed since most defects are the result of a thrombocytopenia. Morphologic abnormalities of platelets are detected on examination of the peripheral blood smear.
- c) In the diagnosis of plasma coagulation defects, first stage activity is gauged by performing the partial thromboplastin time. This test is abnormal in patients suspected of having conditions like hemophilia. The prothrombin time of Quick gives an indication of second stage activity and finally a direct measurement of the fibrinogen level, which actually is the most important limiting factor of all the coagulation tests, made. Of utmost importance is the technique in draw-

ing the blood. It must be remembered that unless a clean venipuncture is made so that there is no admixture of tissue thromboplastic juice, coagulation studies are of little value.

A useful scheme to follow in investigating any bleeding disorder is summarized as follows:

1. Vascular integrity — tourniquet test
— bleeding time
2. Platelets — platelet count
and smear

3. Plasma coagulation — partial throm-
boplastin time
— prothrombin
time
— fibrinogen level

It is hoped that the above short outline will aid in providing a more logical approach towards the evaluation of an hemorrhagic diathesis. The coagulation research laboratory will be helpful in determining

- a) the exact type of deficiencies present
- b) the degree of deficiencies and
- c) follow-up of patients treated for such diseases.

L. M. FISHER, M.D.

New Books.

W. B. SAUNDERS COMPANY features the following new editions in their full page advertisement appearing elsewhere in this issue:

ANDREWS and DOMONKOS—Diseases of the Skin

A thorough revision of a classic text offering sound advice in dermatologic diagnosis and treatment

AEGERTER and KIRKPATRICK—Orthopedic Diseases

An up-to-the-minute book to aid you in the accurate diagnosis of bone disease

BEESON and McDERMOTT—Cecil-Loeb Textbook of Medicine

The New (11th) Edition of a world-famous text, with contributions by 173 noted authorities and details of over 800 diseases

Highlights of the Medical Facilities Survey and Construction Program in Virginia

Under the provisions of the Hill-Burton Act, passed by Congress in 1946, outstanding progress has been made toward providing Virginia with modern medical facilities. The General Assembly enacted legislation in 1947 permitting the Commonwealth to participate in the Hill-Burton program and in the past fifteen years over 151 million dollars of new medical facilities have been constructed throughout the State in excess of 10.7 million dollars annually.

The original version of the Act passed by Congress made assistance available to either non-profit associations or public agencies to build, remodel, or expand hospitals and construct public health centers. An amendment in 1954 broadened the original provisions to permit funds to be used for: (1) hospitals for chronically ill and impaired; (2) diagnostic and/or diagnostic and treatment centers; (3) nursing homes; and (4) rehabilitation centers.

Encouragement and assistance to local communities in planning and construction of needed medical facilities is a primary purpose of this program. The program operates on a grant-in-aid basis and is financed through local resources supplemented by

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Federal and State funds. Financial assistance is available to local areas which take initiative in meeting the qualifications and standards for participation. Operation and maintenance of all facilities built under auspices of the program remain fully under local control upon their completion. No control is exercised over the administration of the facility or over its medical staff.

Administration of this program at the State level is the responsibility of the State Department of Health. Need for additional medical facilities is greater in some areas than in others, while at the same time financial resources available will assist in building only a portion of that need. Realizing these facts, the development and annual revision of the State Plan for Construction is an important part of the Health Department's responsibility. Individual hospitals, professional organizations, State agencies and interested persons all assist the State in this important phase of the program by furnishing the latest data available on health and medical care needs in the Commonwealth.

More than half of all Hill-Burton projects now completed are new facilities. Fourteen of the projects for additions and alterations are to facilities originally constructed under this program.

The one hundred and nineteen projects completed to date have added 5,864 beds to

TYPE OF CONSTRUCTION					
Category	New Additions	Alterations	Built	BEDS Replaced	Net Gain
General	33	50*	6,239	2,243	3,996
Chronic Disease	1	5	405	60	345
Nursing Home	1	3	174	48	126
Rehabilitation	2	5	143	5	138
Diagnostic and Treatment	1	4			
Public Health Center	44	1**			
State Health Laboratory	2				

* totals will not correspond with total projects due to multiple project construction.
** six additional health centers were constructed in conjunction with general hospitals and figures are not separated.

those available for patient use. In addition, there are twenty-four projects now under construction or in the planning stage that will add an additional 1,097 beds. However, as the accompanying table indicates, all of these beds cannot be counted as a net gain to the State total.

In 1947 the State Plan listed ninety-six general hospitals with an acceptable bed capacity of 6,870. The 1963 revision of this plan indicated that there are now one hundred and eleven general hospitals with 12,900 acceptable beds. General acute hospital projects account for fifty-eight percent of all approved projects; ninety percent of all beds constructed and eighty-four percent of all Hill-Burton funds allocated to date.

Each project is a community enterprise involving time and effort as well as financial support. Over 88 million dollars have been spent by these communities on facilities which have inspired mutual pride and responsibility among the citizens of the area served. Today every county in Virginia has a full-time local health department and all but two hospital service areas have general hospital facilities. That the program is statewide is indicated by the following table:

SIZE OF COMMUNITY IN WHICH GENERAL HOSPITALS ARE LOCATED		
Size of Community	General Hospital Projects	Beds
Under 10,000	41%	20%
10,000-49,999	28%	28%
50,000-99,999	9%	21%
100,000 or more	22%	31%

State law provides a twenty-member Advisory Hospital Council, appointed by the Governor to advise and consult with the State Health Commissioner in the administration of this program. Membership of the Council is composed of representatives of non-governmental organizations, consumers of hospital services, and of State agencies "concerned with the operation, construction, or utilization of hospitals". Since the beginning of the Council, Virginia has been fortunate in having members serve on this body who have been active, time giving, and well informed. More than fifty citizens have served on the Council and it is to them that the Commonwealth is indebted for the formulation of a well-planned administrative program providing the medical facility construction which has touched upon the lives of nearly every citizen of the State at some time during the past fifteen years.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE
DISEASE CONTROL

	Apr. 1963	Apr. 1962	Jan.- Apr. 1963	Jan.- Apr. 1962
Brucellosis	0	3	0	4
Diphtheria	0	1	0	4
Hepatitis	76	92	407	589
Measles	1355	1425	4170	6238
Meningococcal Infections	13	4	49	26
Aseptic Meningitis	1	1	10	6
Poliomyelitis	0	1	0	2
Rabies (In Animals)	28	12	89	56
Rocky Mt. Spotted Fever	1	1	1	3
Streptococcal Infections	737	675	4448	3632
Tularemia	0	1	5	5
Typhoid Fever	2	1	3	5

Headache

Estimates of the number of Americans suffering from headaches at any one time range from 8% to as high as 65%, according to *Patterns of Disease*, a Parke, Davis & Company publication for physicians. The tension headache ranks number one among

head pains, accounting for some 85% followed by migraine, to which an estimated 5% to 10% of the general population are subject. Less than 1% of headaches encountered by physicians stem from illness which can be considered life-threatening.

Miscellaneous

Some Do's and Don'ts Designed to Improve Public Relations Between Communities Seeking Physicians and Physicians Looking for Virginia Locations

During the years that I have served on the Public Relations Committee of The Medical Society of Virginia, I have had the privilege or misfortune to both see and read of instances in which thoughtlessness and, in some cases, outright discourtesy—bad manners if you choose to “call a spade a spade”—have hurt the Image of the Physician as well as adversely affecting our Medical Schools. The criticism of the Medical by a Community is created because the people see the Doctor as a rude, discourteous, ungrateful person before they have had an opportunity to learn or benefit from his excellent medical training. Due to pressing demands of my practice, especially at this particular time, which were augmented by a “mild” flu epidemic, these remarks may seem a bit sketchy and in need of editorial refinement, however, I hope to have a more polished critique in a subsequent issue of The Virginia Medical Monthly.

I sincerely hope that no one will take personal offense from what I have written. I assure you that all comments, criticisms and suggestions, will be welcomed and appreciated.

DO'S:

Answer all correspondence promptly if only with a postcard.

Be courteous and write a note of thanks if a community entertains you with the hope you may locate there.

Let a community know of your decision just as soon as it is made, particularly if you have told them you are interested in their opportunity.

Notify the Virginia Council when you have decided upon a location. Also tell the Council if it was helpful to you in reaching your decision.

DON'TS:

Don't make an appointment and then fail to keep it. If it is not possible for you to keep an appointment be sure to notify the contact person well in advance, and schedule another appointment.

Don't indicate to a community you are interested and then never let them know when you have reached a decision NOT in their favor.

Don't mislead the community—tell them the truth. If you know you would not be interested in locating there, tell them so. Quite often communities have been by-passed because they were waiting for a physician to make his decision.

* * * *

Choosing a place to practice is one of the most important decisions you will make during your life time. Weigh all factors carefully, allow ample time, revisit communities several times, and above all involve your wife and family in your decision.

Good luck! Virginia is a wonderful place to live and to practice medicine!

If The Medical Society of Virginia can be of any assistance to you please do not hesitate to let us know.

Your Public Relations Shows!

Just a reminder that it is to your BEST interest, as well as to that of the medical profession, to answer or acknowledge *all* first class correspondence promptly. We refer particularly to communications you get relating to the Physician Referral Service of

the Virginia Council on Health and Medical Care.

Be sure to follow through on commitments you make regarding visits, appointments and other matters with communities.

We know you are busy BUT—COUR-

TESY PAYS OFF.

Please accept this memo as an effort to improve public relations for the medical profession.

JOHN WYATT DAVIS, JR., M.D.

Chairman, Public Relations Committee

Antibiotic Relieves Heart Pain

An antibiotic customarily used for fungus infections of the skin has produced unexpected relief of chest pain in 10 heart patients, according to three New Orleans physicians.

The effect was first noted in an elderly patient who had angina pectoris, a chest pain associated with certain heart conditions, who was given griseofulvin for the treatment of a fungus skin infection, Drs. N. P. DePasquale, J. W. Burks and G. E. Burch wrote in the May 4th Journal of the American Medical Association. The patient received "marked relief of his angina pectoris while receiving griseofulvin."

Griseofulvin then was given to 10 other

patients with severe coronary heart disease who had at least 20 anginal episodes a week.

"All of the patients reported a decrease in the number of anginal episodes after receiving griseofulvin for two or three days." In three patients, cessation of griseofulvin therapy was followed by an increase in the number of anginal attacks to the same frequency as before griseofulvin therapy. Re-institution of griseofulvin therapy again was followed by a relief of the anginal pain."

Although the way in which griseofulvin alleviated the pain is not known, the drug might be useful in managing angina attacks in patients in whom more conventional means of therapy have been ineffective.

"Be not the first by whom the new are tried,
Nor yet the last to lay the old aside."

—ALEXANDER POPE

House Staff Exploitation—Fact or Fiction?

POST-GRADUATE TRAINING has been well-established for many decades as the modality whereby recent medical school graduates are transformed from didactically-prepared students to smooth functioning clinicians. A few members of each class will deviate from pure clinical aspirations to become teachers, research investigators, administrators, or directors of medical education. An even smaller number engage in the pursuit of other extra-clinical variants. The majority, however, are preparing for practice, and a period of intensive *practical* attack on clinical problems is essential. This may vary from a single year's internship, preparatory for general practice, to a half-dozen year's residency in some surgical field. Regardless of the medical objective the basic premise of repeated exposure to *actual* patients embodying diagnosis and treatment with the responsibility that this entails is essential. And it follows logically, discounting individual variations such as inherent ability, energy, drive, ambition and desire, that the young physician who sees, palpates, observes, and treats the most patients will be the best prepared.

A well-balanced program including lectures, conferences, movies, symposia, and other teaching media is necessary but none of these can supplant repeated supervised patient examinations, diagnoses, and treatments. Unfortunately for the immature doctor, and even worse for his patients of the future, a growing tide of enthusiasm among those directing the fortunes of medical education is attempting to "protect" the house doctor from alleged abuses of all types but particularly from "overwork". They seem to rationalize that he can be taught clinical experience by occasional *selected* patient contact emphasizing the rare to the exclusion of the frequent. Responsibility, judgment and dedication, those essential but intangible ingredients of the true physician, are emphasized little if at all either by teaching or example. In recent years, therefore it has become fashionable in more influential medical circles to disparage, ignore, or eliminate many of the facets of interne and resident training historically proven to produce good physicians. Much of this current vogue results from the keen competition among hospitals for the services of these young doctors, and the inducements often offered the recent graduate have

soared astronomically both professionally and financially. Indeed, amazing as it may seem, such juicy enticements as country club membership, lucrative positions for the wife, free insurance policies, discounts on clothing and groceries, and even paid-up baby sitters are not unheard of in attracting internes. At the same time fashionable rent-free apartments in addition to a salary, envied by many of the young attendings, is more or less routine for the "struggling" house physician. Certainly, as in the case of labor reform, many improvements have long been in order, but one conjectures as in the case of the former, if possibly we have not over-corrected and over-compensated. For many years it has been thought that hard work involving clinical problems was the *piece de resistance* of training rather than souped up lectures, medical movies, complete segregation from private patients, and a continued emphasis on giving the house staff less and less work and responsibility. It is time to evaluate this novel policy, which does not conform at all with the lofty precepts of medicine. cursory observation reveals the physician, "trained" under this almost *laissez faire* concept, to be woefully inadequate for the problems of medical practice.

The average potential house doctor, and, of course, there are exceptions, is primarily interested nowadays in two features—salary and the amount of leisure time available in a particular program. Somewhere down the line, but with a much lower priority, an evaluation of the characteristics and opportunities of the training available may be requested. Incidentally, since he has already been research-oriented, he may be interested more in the experimental than the clinical laboratory facilities. Although it has been demonstrated for years that opportunity is wasted unless call is taken every other night, a more liberal nocturnal and week-end schedule is often demanded. In many hospitals emancipation from as many night, week-end, and holiday calls as possible is in effect, this being an added inducement.

Exclusive of salary and leisure time, the question of private patient relationship and responsibility seems next in importance. Hospital administrators, directors of medical education, medical school advisors and others have often promulgated the concept that the private patient has *no* role in graduate training, and that the house physician should never be requested to perform any services for them. Indeed, this alleged and greatly magnified misconception may be paramount in the evaluation of the institution by the latent interne or resident. This asserted doctrine of implied exploitation by the private physician is wrecking the training program of many of our hospitals, is lessening the quality of private patient care, and is eliminating one vast area of rich and rewarding training. A well-supervised clinic service is admittedly the most important and probably the best single factor in post-graduate training but the fact

remains that virtually all of our hospitals including those with medical school affiliations are "mixed"—that is, part clinic and part private. Indeed, in most institutions not eligible for federal and/or state funds or vast grants, the private patient usually "carries the freight" for the clinic service. Furthermore, much of the best pathology is seen on the private service as well as examples of superior treatment and care. A conscientious physician who is a good and interested teacher will advance knowledge and skill far more rapidly on his private patients than the groping and uncertainty often encountered on a poorly managed clinic service. This is not an apology for the private physician who expects the house staff to help with his private patients and who gives nothing in return. Properly employed the private patient is a golden source of excellent training. This medium should not be neglected.

A reversal therefore of many of the current trends in graduate education is highly necessary. Hard work and long hours are the school for the physician who would become proficient. To label this as exploitation is to produce a generation of medically sterile and ineffective doctors. A balanced program with the essential emphasis on *clinical contact* under expert but firm guidance is mandatory and ideally includes clinic and private patients. Adjunctive didactic instruction is worthwhile and necessary, but is *no* substitute for the acquisition of clinical experience.

CHARLES E. DAVIS, JR., M.D.

Norfolk, Virginia

New Members.

The following new members were received into The Medical Society of Virginia during the month of April:

John W. Barnard, M.D., Grundy
Donald Rider Holsinger, M.D.,
Martinsville
Robert Hutchings Jennings, M.D.,
Charlottesville
Bernard Tandoc Juguilon, M.D.,
Portsmouth
Horacio Duarte Martinez, M.D., Norfolk
Richard Milton Newton, M.D., Roanoke
Benjamin Elliott Norfleet, M.D.,
Newport News
Eduardo Jorge Schick, M.D., Norfolk
Charlotte Wild, M.D., Newport News
Roger Merrifield Winborne, Jr., Roanoke

Dr. Nelson Appointed Dean.

Dr. Kinloch Nelson, Richmond, has been appointed dean of the school of medicine of the Medical College of Virginia, effective July 1st. He will succeed Dr. William F. Maloney who recently resigned to accept a position with the Association of American Medical Schools.

Dr. Nelson is a native of Richmond and received his medical degree from the University of Virginia in 1927. He has been associated with the Medical College of Virginia in various capacities in the department of medicine, particularly the out-patient department, since 1929. Since 1945 he has been physician in charge of the medical out-patient clinic. He has also been director of the continuation education program, director of the home care program, chairman of the intern committee, and consultant in internal medicine at the McGuire Veterans Administration Hospital, with the faculty rank of professor of medicine.

Dr. Cary G. Suter,

Associate professor of neurology of the Medical College of Virginia, has been named as chairman of the division of neurology, succeeding Dr. Weir M. Tucker who has been serving on a part-time basis since 1958. He resigned as he felt the department needs a full-time chairman. Dr. Suter has been with the department since 1959. He is especially responsible for the expansion of the EEG laboratory and for setting up the electromyography laboratory.

Dr. David E. Smith,

Charlottesville, has been named president-elect of the International Academy of Pathology.

Dr. Robeson Honored.

Dr. Ella T. Robeson, director of the Hampton Public Health Department, has received the Charles B. Borland award from the Hampton Roads Sanitation District Commission. The award is given annually to the individual who has done the most to fight area water pollution and Dr. Robeson was cited for her work in abating pollution from private outfalls in the city.

Dr. George B. Craddock,

Lynchburg, has been appointed by Governor Harrison as a member of the State Board of Medical Examiners. He succeeds Dr. Charles M. Irvin, Roanoke, resigned, and will serve until June 30, 1965.

Wise County Medical Society.

Dr. Ronald N. Shelley, Norton, has been elected president of this Society, with Drs. Delmas Jones, U. S. Gonzalez, and Norman Propper as vice-presidents, and Dr. Joseph Straughan as secretary-treasurer.

J. Shelton Horsley Memorial Lecture-ship.

The 17th Annual J. Shelton Horsley Memorial Lecture was given at the Richmond Academy of Medicine on April 23rd. Dr. Chester M. Southam, head of the section on Clinical Virology and Oncogenic Virology of the Sloan-Kettering Institute for Cancer Research, New York, spoke on Clinical Experiments in Cancer Immunology.

Grant for Kidney Research.

A seven-year grant totaling nearly three million dollars has been awarded to the Medical College of Virginia to establish and support a full-fledged program in kidney transplant operations. The grant is made by the National Heart Institute of the National Institutes of Health, Bethesda. The Medical College of Virginia has been active in kidney transplant work in recent years and is the country's first medical center to receive an NIH grant for this purpose. It will make the college one of the most active centers for this work in the nation.

The grant will take care of the hospitalization costs for kidney transplant patients, construction costs for a special ward and equipment, and the operating expenses of the special ward. It is hoped the new ward will be completed by September and it will be able to accommodate a maximum of six patients at a time.

Dr. E. C. Drash,

Charlottesville, has been re-elected for a third term as president of the Virginia Tuberculosis Association.

Dr. Basil E. Roebuck

Has joined the Medical Research Department of The Wm. S. Merrell Company division of Richardson-Merrell, Incorporated, as Associate Director of Clinical Research. In

addition to general practice in England and several years of private practice in the field of psychiatry in the United States, Dr. Roebuck has been Director of the Northwestern Guidance Center and Staff Psychiatrist and Director of the Department of Electroencephalography at Winchester Memorial Hospital. He was also Director of Training and Research at Eastern State Hospital, Williamsburg, and associate in Psychiatry and Neurology at the Medical College of Virginia.

Hospital Name Changed.

Westbrook Sanatorium, Incorporated, Richmond, originally established in 1911, has announced that the name of the hospital has been changed to Westbrook Psychiatric Hospital, Incorporated. Dr. Rex Blankinship, President, states that this is a change in name only and the ownership, directors and officers remain the same.

Dr. John R. Saunders, medical director, has announced the addition of Dr. J. McDermott Barnes, associate in psychiatry, to the staff.

EENT Section of Southern Medical Association.

The 57th Annual Meeting of the Southern Medical Association will be held in New Orleans November 18-21.

The EENT Section will initiate the closed TV sessions this year with the first attempted color production of microscopic ear surgery. The eye program will include a practical review on that pathogenesis and technical management of fibrous dysplasia and timely articles concerning air rifle injuries and other traumatic injuries to the eye.

Physicians desiring to present papers at this session are urged to correspond with the Section Secretary at their earliest convenience as the cut-off date is June 30th. Dr. Neil Callahan, 506 Professional Building, Portsmouth, Virginia, is Section Secretary.

Obituaries

Dr. William Edward Smith,

Farmville, died April 30th at the age of sixty-three. He was a graduate of the Medical College of Virginia in 1924 and had practiced in Farmville since that time. He was formerly chief of the medical staff of the Southside Community Hospital. Dr. Smith was chairman of the Prince Edward County school board, a past president of the Farmville Lions Club and past district governor of Lions International. He had been a member of The Medical Society of Virginia for thirty-seven years.

His wife, a daughter and a son survive him. A brother is Dr. Maynard P. Smith, Richmond.

Dr. John Randolph Tucker,

Williamsburg, died April 12th after a long illness. He was sixty-five years of age and a graduate of the Medical College of Virginia in 1928. Dr. Tucker began his practice in Williamsburg in 1930 and was the founder of the Tucker Clinic. He was a past president of the James City County Medical Society and the Williamsburg Rotary Club. Dr. Tucker had been a member of The Medical Society of Virginia for thirty-two years.

His wife and a daughter survive him.

Dr. Elliott Dennis Floyd,

Norfolk, died March 29th after a brief illness. He was fifty-nine years of age and received his degree from the Medical College of Virginia in 1928. During his thirty-three year career in Norfolk, he was company surgeon for the Pennsylvania Railroad and assistant surgeon for the Norfolk and Western Railway. Dr. Floyd joined The Medical Society of Virginia in 1938.

His wife, a son and a daughter survive him.

Dr. Phillips.

It is with regret that we record the death of Dr. Bickerton Lewis Phillips at his home in Richmond, February 2, 1963.

He is survived by his wife, one sister, and one niece.

Dr. Phillips, the son of Mr. and Mrs. John William Phillips, was born in Hanover County, November 11, 1883.

His early education was completed in the schools of Hanover County. He then attended Randolph-Macon College and was graduated from the University College of Medicine in 1908. He was associated with Dr. Hoffman, located at Thomas, W. Va. and Dr. E. A. Terrell of Louisa. In 1914, he moved to Richmond, where he was engaged in general practice and became associated with Richmond Public Schools in 1941, retaining this association until his death.

Dr. Phillips was an active and devoted member of the Montrose Baptist Church. He was a member of the Richmond Academy of Medicine, The Medical Society of Virginia and the American Medical Association, also of Thomas N. Davis Lodge No. 351, AF&AM.

Dr. Phillips was held in high esteem by his patients and associates. He was associated with many civic organizations in his community. He enjoyed and participated in water sports at his cottage in Delta-ville, Virginia.

BE IT RESOLVED, by the Richmond Academy of Medicine, on this 12th day of March, 1963, that we express our sincere and heartfelt sympathy to the bereaved family of our departed friend and colleague, to whom this memorial shall be sent, a copy to be made a part of the permanent records of this Academy and a copy submitted to The Medical Society of Virginia.

R. C. SIERSEMA, M.D.

ROBLEY D. BATES, JR., M.D.

J. R. GRINELS, M.D.

Dr. Shepherd.

William Almon Shepherd was born January 9, 1876, in West Virginia but of Virginia parentage. He graduated from Washington and Lee University in 1897 with a B.A. Degree.

While attending medical school at the Medical College of Virginia, he was Professor of English at the Woman's College of Richmond, later to become Westhampton College. He graduated in Medicine in 1904 following which he did special postgraduate work in New York and Baltimore.

He then began the practice of medicine in Richmond but continued teaching at the Medical College of Virginia. He was Director of Microscopical Laboratories from 1906 to 1913 and was Pathologist to the Memorial Hospital. In 1910 he was sent by Medical College of Virginia on an inspection tour of the important Eastern Medical Schools.

He was named Professor of Histology and Embryology in the consolidated schools in 1913 and also Associate Professor of Clinical Pathology. During the military absence of Dr. E. Guy Hopkins he was acting head of this department.

He later was named Associate Professor of Medicine at Medical College of Virginia and taught in this capacity until 1947.

He served as Pathologist at the Johnston-Willis Hospital until his retirement several years ago.

He held membership in the Richmond Academy of Medicine, The Medical Society of Virginia, The Tri-State Society of the Carolinas and Virginia, The American Medical Association, The American Society of Clinical Pathologists, and was a Fellow of The American College of Physicians.

He was a devoted member of the Second Presbyterian Church.

Those of us who were fortunate to come under his teaching skill in Medical School and to work in close association with him for many years will not forget his sunny smile and his eagerness to help with any problem, no matter how tough. His death was a real loss to a large circle of colleagues and friends.

BE IT RESOLVED by the undersigned that a copy of these resolutions be spread on the Academy minutes and that a copy be sent to his family.

DONALD S. DANIEL
JOHN L. THORNTON
T. DEWEY DAVIS, *Chairman*

Dr. Whitehead.

WHEREAS, Dr. Phillip Cary Whitehead, by God's will, has departed this life on the 27th of March, 1963; and

WHEREAS, we, his friends and colleagues of long standing, recognizing the loss to the profession occasioned by his death, do wish to pay tribute to his memory by the adoption of the following resolution:

WHEREAS, Dr. Whitehead was born in Chatham, on October 21, 1914, the son of J. Hurt and Mary Elizabeth Jones Whitehead. He attended the Chatham Elementary School and graduated at age sixteen from Hargrave Military Academy. After two years at

Virginia Polytechnic Institute, he was appointed to the United States Military Academy, West Point, from whence he graduated in 1936. Following his graduation he taught at Hargrave for a year before entering the University of Virginia Medical School, receiving his M.D. degree in 1941. Internship at Montreal General and Bellevue followed his graduation; and

WHEREAS, he, in December 1942, married the former Betty Gordon Willis, a physician in her own right with specialty training in pediatrics, who shared his interest in mankind and by whom he had four sons, John, Hugh, Gordon and Camden, and one daughter, Katie; and

WHEREAS, during World War II he served his country as a lieutenant in the Naval Medical Corps, assigned to Marine Corps, and in that capacity participated in amphibious landings in Bougainville, British Solomon Islands, Guam and Marianas Islands. For his coolness under enemy fire and courageous action in the operations at Iwo Jima, he was awarded a citation and commendation. Upon discharge from the service, he served unstintedly the community of Chatham, in particular being instrumental in providing a high degree of obstetrical care to a segment of the population who were most in need of such attention; and

WHEREAS, he, in June of 1962, moved to Seldovia, Alaska, to continue his practice of medicine and to operate a small community hospital in that area until his loss of life during a storm in nearby waters; and

WHEREAS, we, the members of the Danville-Pittsylvania Academy of Medicine, unite with his many grateful patients and friends to share with his family in their bereavement. His integrity, his dedication to the service of the humble as well as the great, his wisdom and scholarship, free from ostentation, were in the best tradition of the medical profession and an inspiration to those who were associated with him.

NOW, THEREFORE, BE IT RESOLVED by the Danville-Pittsylvania Academy of Medicine, on this 12th day of April, 1963, that we convey to his family our sincere sympathy and deep respect for his memory. This evidence of our high regard for him will be recorded as a memorial for posterity to see.

BE IT FURTHER RESOLVED that a copy of this resolution be sent to his family, a copy to the Virginia Medical Monthly, and a copy be preserved as a part of the permanent records of this body.

RESOLUTION COMMITTEE

G. V. THOMPSON, M.D.

H. H. WILLIS, JR., M.D.

JOHN R. EGGLESTON, M.D., *Chairman*

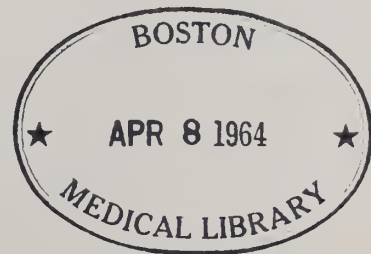
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Guest Editorial



Medicine and Molecular Biology

"Truth in all its kinds is the most difficult to win; and truth in medicine is the most difficult of all"—LATHAM.

EXPERIENCES in clinical medicine rarely reach a position of an established truth for the variables of human response to external and internal environments seem infinite. Pernicious anemia responds rapidly to vitamin B-12 and streptococcal tonsillitis to penicillin, and these would be clinical truths because we have regularly observed no variation to the clinical outcome. In essence, the clinician in listening to the history, examining his patient, and correlating the chief complaint recognizes most illnesses by the overall gross patterns of response to some change in environment. But diagnosis, as difficult as it may be, and response, as gratifying as it is, are just the first steps in understanding the problems of disease.

At first slowly, and now more rapidly and exactly, new concepts and some fundamental truths are emerging from study of the body's intracellular constituents. The spirit of this new knowledge is not descriptive of the organisms as an entity. It is descriptive of the internal biochemistry and biophysics of individual cells. In this we are privileged to observe the ascendancy of molecular biology. As certain as we now diagnose rubeola by a runny nose, morbilliform rash, Koplick spots, fever, and "measly odor", time will come when each descriptive component will be examined and better understood in terms of reaction rates, thermodynamics, enzyme induction, DNA and RNA templates, and the step by step synthesis of specific protein molecules in the ribosomes of the endoplasmic reticulum. This production of protein by plasma cells and lymphocytes imparts to the host a life-long immunity. The concepts of molecular biology have reached thousands of children in the last month by physicians' adroit combination of gamma globulin proteins and live rubeola virus to stimulate the internal biochemistry of the cell to perform special functions. This is molecular biology in practice.

The syndrome of sickle cell anemia touches every organ system. The presenting signs are legion. This disease is now understood to be dictated by a genetically-directed substitution of one simple amino acid, valine, for another—glutamic acid—in the beta chain of the hemoglobin molecule. Another significant example is pernicious anemia, truly a nutritional disease, whose clinical manifestations and pathologic physiology would satisfy the usual criteria for a malignancy of the blood-forming tissues. Here the failure of formation of a highly specific protein by the cells of the gastric mucosa prevents the absorption of the vitamin B-12 molecule by the ileal mucosa. Lack of vitamin B-12 as a co-factor for proper reaction sequences in DNA and other syntheses brings about the easily recognized clinical syndrome. The importance in these examples is the recognition of the chromosome, gene, enzyme and transport of molecules and atoms towards a predetermined end governed by biological constants.

In mid-April more than 17,000 medical scientists registered in Atlantic City for the largest scientific meeting of its kind ever held in the world. One could watch molecular biology unfold in this happy union of biochemist and physiologist, biophysicist and nutritionists, immunologist and pathologists, pharmacologists and clinician. The molecular biology of the simplest one-celled animal was guiding the thought of similar processes in the single cells of organs and organ systems in the most complex being, man himself. New knowledge will come wave upon wave. Our appreciation of disease will grow with the understanding of the intracellular forces resulting in clinical syndromes. The present complexities of homologous organ transplantation will be solved by an understanding of protein synthesis mediated through messenger RNA and transfer RNA to the ribosome. We may soon be permitted to direct protein synthesis so as to avoid the rejection of transplanted organs. The imaginative concepts of the basic scientists are moving into the clinics, wards and sickrooms, not only as diagnostic tools, but as fundamental truths. The challenges are unlimited, the opportunities immense.

Where then does "truth in medicine" fit? It comes with the use of a common language and thereby a common understanding. Cellular processes are described in concrete terms, in measureable moieties. It comes when one finds that the intracellular sequence shows no change from the observations of others. These truths in medicine are difficult to win, but they are emerging, and with them will come the secrets of the biological constants controlling the continuity of life. For the physician the aims to preserve life, promote healing, prevent suffering, and serve man and his Maker will be met.

G. WATSON JAMES III, M.D.

Richmond, Virginia

Gastric Physiology As Related to Peptic Ulcer

BENJAMIN W. RAWLES, JR., M.D.
Richmond, Virginia

An understanding of the anatomy and physiology of the stomach is necessary before successful surgery for peptic ulcer is possible.

IF WE ARE TO TREAT gastric and duodenal ulcers successfully, we must have an understanding of both the normal physiology of the stomach and duodenum along with the possible abnormalities that may alter gastric secretion or the protective mechanism of the gastro-duodenal mucosa. We know that pure gastric juice has a capacity to digest and destroy the unprotected gastric or duodenal mucosa, but, under normal conditions, this is prevented by the combined efforts of the mucus that bathes the mucosa and the neutralizing saliva, ingested liquids and foods and the regurgitated alkaline duodenal contents.

The realization that the exclusion of the antrum, as done in the Devine and Finsterer operations for unresectable duodenal ulcers, frequently resulted in jejunal ulcers, greatly stimulated research in the field of gastric secretion. After many years of laboratory investigation, there is more or less agreement as to the basic mechanism of stimulation and inhibition of gastric secretion. Unfortunately, it has not been possible to apply all of these conclusions to clinical medicine, so the debate continues as to what is the best surgical procedure for the management of gastric and duodenal ulcers.

It will be impossible to discuss in detail

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all of the facts that have a bearing on the digestive process. The motor function of the stomach and some of the other aspects of gastric digestion will not be discussed, due to the lack of time.

Anatomy and Histology

The gastric mucosa is divided into three areas: a narrow zone about the cardia, 3-6 mm. in width; the fundic gland area, making up the largest portion of the mucosal surface; and the pyloric gland area, extending from the pylorus to the fundic area. The pyloric gland area comprises approximately 15 per cent of the mucosal area of the stomach and extends along the lesser curvature for 35-44 per cent of its length and along the greater curvature for 11-15 per cent of its length.²

The cardiac area is lined by columnar cells secreting mucus. There are four types of cells in the fundic area: 1. Surface epithelium secreting mucus; 2. Mucous neck cells secreting mucus; 3. Zymogen (chief) cells secreting pepsinogen; and, 4. Parietal cells secreting hydrochloric acid, which activates the pepsinogen into pepsin. The pyloric area is lined with the same two types of mucus secreting epithelium as are found in the fundic area. Secretion from all of these cells is exogenous. The hormone gastrin is produced in the pyloric gland area. It is also produced in the Brunner's gland area of the duodenal mucosa.^{1,2,3.}

Physiology of Gastric Secretion

Three phases of gastric secretion have been recognized since the monumental contribution of Pavlov: 1. the cephalic; 2. the gastric; and, 3. the intestinal. The sight, taste or smell of food will initiate impulses through the vagus nerve that will stimulate

the secretion of hydrochloric acid, pepsinogen and mucus. Gastrin, in small amounts, may also be elaborated in this phase.

The gastric phase is primarily concerned with the formation of gastrin in the pyloric gland area. This hormone is absorbed in the blood and primarily stimulates the secretion of hydrochloric acid from the fundic gland area. In addition, the presence of food and liquids in the stomach, through vagal reflexes, further stimulates the secretion of gastric juice.

The existence of such a substance as gastrin was first suggested by Edkins⁴ in 1906. It was first thought to be histamine or one of its derivatives. It is believed to be a specific substance, alkaline and highly viscid; however, its chemical nature is not known. The formation of gastrin is stimulated by bathing the pyloric mucosa with water, ethyl alcohol and water extracts of meat; also by the mechanical distension of this area by the gastric contents and by the mechanical action of increased peristalsis.⁵

The formation of gastrin is inhibited when the pyloric gland mucosa is bathed in acid with a pH less than 1.5. This acts as a built-in "cut off", and, for this reason, Wangensteen and others have advocated preserving the antrum in continuity. Other inhibiting factors operate as part of the intestinal phase.

The intestinal phase has two actions: one, stimulatory and the other, inhibitory.⁷ The end product of protein digestion in the duodenum causes gastrin or histamine to be elaborated. These are absorbed in the blood and primarily stimulate the fundic gland area to secrete hydrochloric acid. Pancreatic secretion may exercise a part in gastric secretion, but the mechanism is unknown at the present time. According to Dragstedt, secretin stimulates pancreatic secretion and, at the same time, probably inhibits gastric secretion.

Fat, carbohydrates and acid, in the small intestine, inhibit gastric secretion, probably through a vagal reflex mechanism. The fat must be emulsified in order to be effective.

Serotonin, a hormone found in the intestinal tract, also inhibits gastric secretion.

Enterogastrone, a hormone, is also produced in both the duodenum and jejunum when fatty foods are in the chyme. This particular hormone cuts in half the emptying rate of the stomach and provides more time for fat digestion. An enterogastrone reflex also becomes effective in delaying gastric emptying when the bowel becomes distended with chyme and also when the chyme is too acid, contains too much fat, is hypotonic or hypertonic, or is irritating. In the final analysis, the amount of gastric juice depends on the interplay between the factors that stimulate and inhibit gastric secretion and gastric emptying.

The Role of The Antrum

Dragstedt, Woodward and others^{8,9,10,11} have demonstrated clearly the roles played by vagus stimulation and that of the antrum in gastric secretion. Resection of the antrum, in dogs, causes marked reduction in the secretion of gastric juice. When the antrum is transplanted in stages to the duodenum, in order to sever completely its extrinsic blood and nerve supplies, exposure of the antral mucosa to the contents of the duodenum powerfully stimulates the body of the stomach to secrete gastric juice. Changing the pH of the antrum by transferring it to the colon, which has a pH of 5.5-6.5, resulted in a marked increase in gastric secretion. In animals with a pyloric pouch, it was found that chemical stimulation of the pouch, using liver extract, caused prompt secretion of gastric juice in Heidenhain pouches, if the pH was 6.0-6.2. When the pH was dropped to 1.5, secretion was inhibited. Alcohol was also found to be a potent chemical stimulator. Mechanical distension of the pouch with a balloon also resulted in stimulation of secretion.

Hypersecretion of Gastric Juice

Undoubtedly, the chief reason for hypersecretion of gastric juice is due to continued

"psychic" vagally transmitted impulses resulting from physical or mental stress and stimulating the fundic glands. The nocturnal phase of hypersecretion, in the absence of food and liquids, may be the most important factor in peptic ulceration.

Gastric hypersecretion occurs experimentally when pancreatic juice and bile are diverted from the duodenum. Menguy⁷ has stated that the exact explanation of this is not known. Since liver function is disturbed under these circumstances, it is possible that hypersecretion could be due to a diminished ability of the liver to destroy histamine absorbed from the intestine as a product of protein digestion. This may explain the high incidence of peptic ulcers in cirrhosis of the liver.

The hormone gastrin, theoretically, should not be a factor in hypersecretion, in view of the built-in control mechanism regulated by the acid values. In practice, however, this is not always the case.

Extra Gastric Causes of Hypersecretion

In 1955, Zollinger and Ellison^{12,13} first reported a syndrome consisting of fulminating peptic ulcerations, gastric hypersecretion and non-insulin secreting pancreatic islet cell adenomas. Since that time, there has been an increased interest in the endocrine aspects of peptic ulcer. It is believed that these tumors produce a gastrin-like substance that is absorbed in the blood stream, resulting in hypersecretion of gastric juices by stimulation of the fundic gland area. Tumors of other endocrine glands have been found in 20-30 per cent of the reported cases with the Zollinger-Ellison syndrome.

In all probability, there is a poly-endocrine adenomatosis in many of the cases associated with peptic ulcer disease. The increased instance of peptic ulcer in patients with hyper-parathyroid disease is well known. In addition to the pancreas and para-thyroid involvement, there may also

be involvement of the pituitary and adrenal glands.

In the past, it was thought that corticosteroid therapy increased the "acid-pepsin" secretion, but more recent investigation has revealed that this is not the case. It has been postulated that steroids cause a decrease in mucus or actually delay the healing of an ulcer.

Recently, there has been interest in the observation that the instances of peptic ulcer seem to be greater in persons with Type O blood. The significance of this is not known at the present time.¹⁴

The Difference Between Gastric and Duodenal Ulcers

Dragstedt^{15,16} has pointed out the basic difference between a duodenal and a gastric ulcer. Duodenal ulcers are caused by hypersecretion of gastric juice as a result of vagal stimulation. On the other hand, the secretion in gastric ulcers is due to humeral or hormonal stimulation of gastric secretion. Because of the absence of vagal stimulation, the stomach is atonic and this results in the accumulation of excessive secretion in the stomach. Actually, the acid values may be low or normal in gastric ulcers compared to those found in duodenal ulcers.

The Ulcer Defect

Sherman¹⁷ believes that our attention should be directed to locating the cause of the defect. It seems probable, according to him, that the "acid-pepsin" keystone in current thinking—promulgated by authorities and supported by fashionable theories—has done little but impede the advancement of medicine in this field.

What is the cause of focal devitalization of the mucosa? There is a rich plexus of arteries and veins in the submucosal area and also on the glandular side, which makes it virtually impossible for arterial occlusion to play any part in the destruction of the vitality of any portion of the mucosa. However, it is possible for large amounts of blood

to be shunted away from the nutrient capillary network directed into the venous system, in certain conditions under neural or humeral control, which allow the shunts to be fully open. Sherman¹⁸ suggests that the final common pathway could be hypoxia. This remains to be proved.

Hollander believes that there are two components to the protection of the mucous membrane: the exocrine layer, the mucus; the other, the layer of mucous epithelium that spreads over the acid-pepsinogen, secreting cells beneath it. Many noxious agents may cause the surface protected barrier to be desquamated, but, normally, there is rapid regeneration. This regeneration may be delayed by an emotional or endocrine disturbance which brings about a vaso-motor change involving end arteries or terminal vascular shunts, as previously described, resulting in a reduction of local metabolic activity essential to the rapid regeneration of the mucous barrier. Recently, there has been experimental evidence indicating that there may be an ulcerogenic factor in saliva which may be mucolytic.¹⁹

The Local Acid-Pepsin Effect

Hollander²⁰ believes that the gastroduodenal ulceration, in all probability, is a matter of auto-digestion effected exclusively by pepsin and that acid is only an adjunct for adjusting the pH of the gastric contents to a value conducive to the optimal action of this enzyme.

Recent evidence indicates, according to Hollander, that there are several acid proteases of gastric origin with different pH activities ranging from 1.8-4.5. If this is so, gastric digestion can continue over a much wider pH range. Hollander further believes that this will account for the ulcers in patients with normal and even hypoadidities which might render futile attempts to cope with the problem by only partial reduction of gastric acidity either by surgical or pharmacological methods. Therefore, acid secretion must be completely abolished or the agents that normally protect the

mucosa against auto-digestion must be reinforced. Efforts are being made by Hollander and others to find an enzyme inhibitor that will completely block the parietal cells secreting acid, but, so far, these efforts have been unsuccessful.

Discussion

In the surgical lifetime of many of us, the operative approach to duodenal peptic ulcers has employed the following procedures: Gastroenterostomy; Subtotal Gastric Resection; Transthoracic or Transabdominal Vagotomy; Vagotomy and Gastroenterostomy; Antral Resection or Hemi-Gastrectomy and Vagotomy; Tubular or Segmental Resection with preservation of antrum; and, Vagotomy and Pyloroplasty. There is still no unanimity of opinion as to the best procedure, but a better understanding of the basic physiology has brought us closer to such a viewpoint.

Our present knowledge of gastric physiology would suggest the following:

1. That in duodenal ulcer the approach should be to interrupt the vagal pathway through which impulses travel to stimulate the fundic glands to secrete gastric juice.
2. That a pyloroplasty is a better drainage procedure than is gastroenterostomy, eliminating possible gastrin promotion as a result of mechanical distention with retained food and liquids.
3. That antral resection is indicated in gastric ulcer, but antral preservation might be indicated in duodenal ulcer because of the built-in "cut off" which inhibits gastrin formation.
4. That a diet high in fat content may delay gastric emptying and could possibly be helpful in relieving post-gastrectomy dumping symptoms.

Conclusion

1. The normal and abnormal physiology of gastric digestion must be understood if the proper operative procedure is to be utilized in the surgical treatment of peptic ulcers.

2. There is normally a balance between the mechanisms responsible for the stimulation and the inhibition of gastric juice secretion, and the antrum has an important role in this control.

3. Perhaps too much attention has been directed to the "acid-pepsin" role in peptic ulcerations and too little attention focused on the factors that break the protective barrier or actually cause ulcerations.

4. Hypoxia may be the final common pathway in peptic ulceration.

5. Auto-digestion of the mucosa may take place over a wider pH range than has been thought in the past.

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Standard Procedures in the Surgical Treatment of Peptic Ulcer

CHARLES E. DAVIS, JR., M.D.
Norfolk, Virginia

The various surgical procedures used in the treatment of peptic ulcer are discussed.

PERHAPS NO TOPIC IN SURGERY has elicited the profuse literature such as that recorded by the proponents of different methods of attacking peptic ulceration. This is a natural sequence of the improvement in knowledge of gastric physiology, and at the same time of some *basic* dissatisfaction with the methods hitherto employed. By comparison, however, with operations done for other diseases, recent results are generally good regardless of the procedure used provided that technique is flawless and the indications sound. There are at the present time four major methods that dominate the surgical attack.²⁵ All of the methods currently in vogue are based to some extent on the modern concepts of gastric physiology and although there is some difference as to the relative significance of the various aspects, the essential principle in *all* techniques is to produce achlorhydria. There is general agreement that acid hypersecretion is the single factor most uniform in the production of ulcer. Each operation has its advocates and its critics. Reluctant as we may be to abandon time-honored techniques, which have given good results in our hands, we should be prepared to adopt even newer methods when

convinced that they are superior. Conversely, we must be vigilant not to embrace a new procedure with fervent enthusiasm until it has been adequately tested over a long period of time and proved unquestionably to be more effective and safer. One has only to remember one and a half decades ago when, due to the impetus of Dragstedt's superb work, simple vagotomy was felt to be the panacea for the ulcer diathesis. The havoc caused by this before it was combined with drainage procedures was strongly impressed upon surgeons. It is most important that large groups with adequate facilities therefore perform new techniques in great numbers and observe the results over a long carefully controlled follow-up period before their general adoption by practicing surgeons to the exclusion of time-honored operations which have been proven to be satisfactory although not 100 percent efficacious. Often the enthusiasm that one generates for a certain procedure negates unbiased interpretation of results unless careful follow-up surveys are objectively made.

The four operations of greatest popularity now employed are all based on an attack on the excessive acid-pepsin secretion mechanism and, with proper and judicious selection, provide some relief from the ulcer diathesis in most instances. We, as surgeons, are concerned primarily with the procedure with the lowest mortality, with the slightest morbidity, with the greatest permanent relief, and with the fewest unpleasant side effects. Although outmoded, and no longer enjoying popular acclaim simple gastroenterostomy, contrary to many, does have an occasional indication. (Fig. 1) It does

Presented at the annual meeting of the Virginia Surgical Society and the North Carolina Surgical Association, Hot Springs, Virginia, April 13-14, 1962.

not rank in the top echelon, but may be life-saving in the elderly poor-risk patient with pyloric or duodenal obstruction due



Simple Posterior Gastroenterostomy

Fig. 1



Vagotomy and Gastroenterostomy

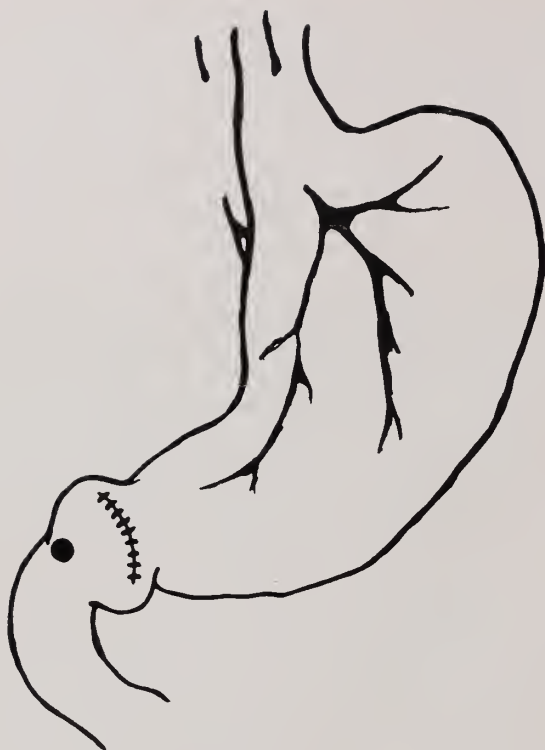
Fig. 2

to ulcer cicatrix. Because of a recurrence rate of 20 to 50 percent it has no significant role in the treatment of most ulcer patients.

A discussion of the merits as well as the disadvantages of currently used procedures follows:

1. *Subdiaphragmatic vagotomy combined with a drainage procedure, either gastroenterostomy (Fig. 2) or pyloroplasty.* (Fig. 3) The advantages attributed to this operation are its lesser magnitude, its technical simplicity, and its resultant low operative mortality. Nutritional problems are minimal. Perhaps its most attractive feature to the surgeon is that the duodenum with its contiguous inflammation, edema and friability in severe cases does not have to be directly attacked, and hence the one great hazard of several other procedures in current usage is eliminated. It is unfortunate

that this operation is associated with a very appreciable incidence of recurrent ulceration which negates its effectiveness as a definitive procedure of choice.^{4,5,12,14} Furthermore, to be effective vagotomy must be total, and this may not be easily accomplished. Transabdominally, it is definitely not routinely simple. Indeed, contrary to many vagotomists, it is often fraught with danger, difficulty, frustration, and uncertainty, particularly in the rotund or massive patient. Its successful achievement, therefore, may be as formidable as alleged more radical procedures in the hands of other surgeons. In my opinion its usage should be relegated to the occasional extremely poor-risk patient, and in those circumstances in which manipulation of the unusually severely inflamed duodenum with its attendant jeopardy might well be disastrous. Al-



Vagotomy and Pyloroplasty

Fig. 3

though most eschew it, this technique has its proponents as the operation of choice (Grimson, Dragstedt, Farris, Weinberg) but certainly in the Eastern part of the United States it does not now enjoy general popularity.^{4,7}

2. *Segmental gastric resection* as described by Wangensteen, by Ferguson, by Berne and others has never enjoyed great favor. (Fig. 4.) In this surgical exercise a rather extensive resection of the body and fundus with preservation of the gastric antrum and usually simultaneous pyloroplasty are the essential features although the techniques vary. Many are complicated. Its theoretical action is based upon acidification of the antrum with resultant depression of acid secretion. In this much of the gastric reservoir is lost and the overall long-term results have not been particularly satisfactory.

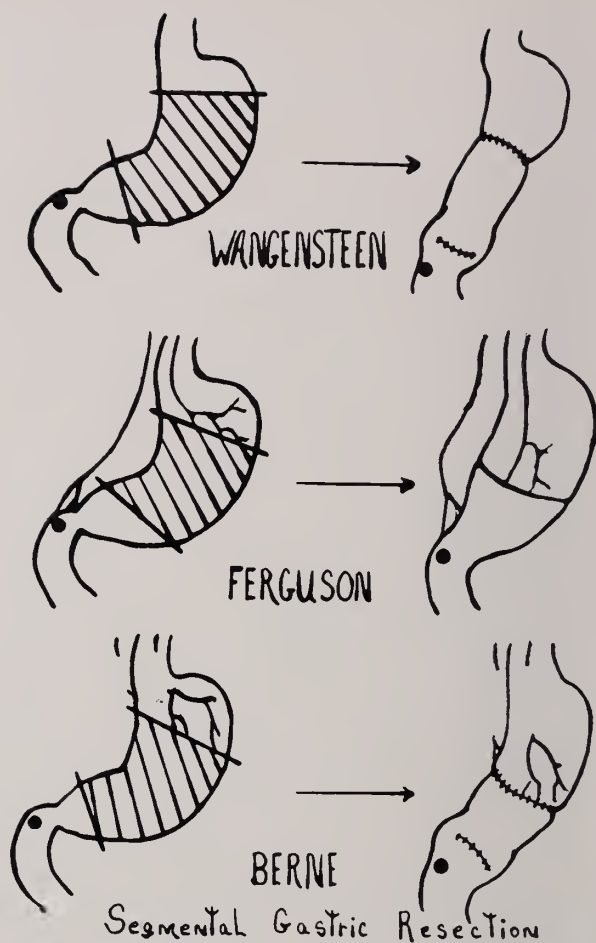


Fig. 4

3. *Adequate subtotal gastric resection* is the operation that has stood the test of time and it probably remains the most popular. Many advocates still attest to its effectiveness although not as vociferously as the devotees of newer techniques.^{2,16} It has a favorable cure rate as well as an acceptable mortality when properly employed. On the negative side, however, it does entail direct attack on the duodenum, and this is its Achilles heel especially if an effort is made to always excise the ulcer.²² Lahey and others have emphasized that the mortality is directly related to the adequacy of management of the duodenum. For this operation to be consistently effective at least three-fourths of the stomach must be resected, thus eliminating the antral phase of acid secretion, as well as a large portion of the acid secreting parietal cells. This latter fact, however, is the salient

objection inasmuch as various undesirable late sequelae have been attributed to such an extensive excision. Post-gastrectomy anemia, weight loss, the so-called "dumping syndrome", lack of reservoir, intolerance for some foods, and other unpleasant complications do occur. These can be minimized by judicious selection of patients, detailed pre-operative discussion with the patient, and technical precision emphasizing particularly a small stoma and a short proximal loop. Many technical variations of this operation have been described. After resection one may anastomose the gastric pouch to the duodenum or do gastrojejunostomy according to various modifications of the historical Billroth descriptions. (Figs. 5 and 6) It has been conclusively demonstrated if vagotomy

emergency conditions. It remains the preferable method of treatment in *gastric ulcer*²⁰ where even a more modest resection is uniformly effective. The late manifestations of dumping, weight loss, anemias and other deleterious side-effects have been repeatedly emphasized but are relatively infrequent in my experience.

4. The most recent technique seriously proposed and the one now receiving many converts is that of *vagotomy and antral resection* (hemi-gastrectomy or limited gastric resection) as advocated by Dr. William Scott and his associates at Vanderbilt University, Dr. Henry Harkins, Dr. Reginald Smithwick, Dr. Robert Zollinger, Dr. Louis Palumbo and many others. (Fig. 7)^{10,18,11,12,13,14,17,19,23} At the present time the popularity

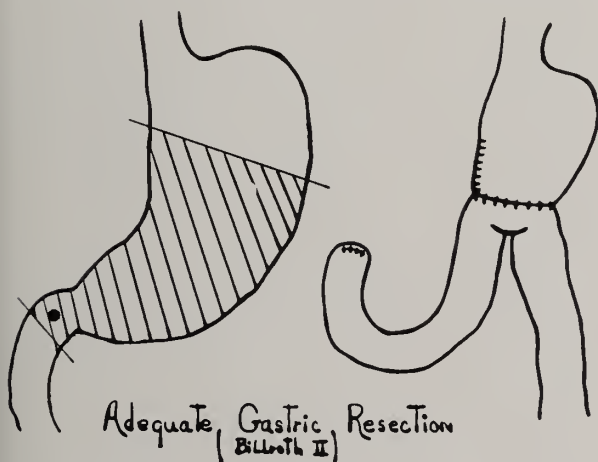


Fig. 5

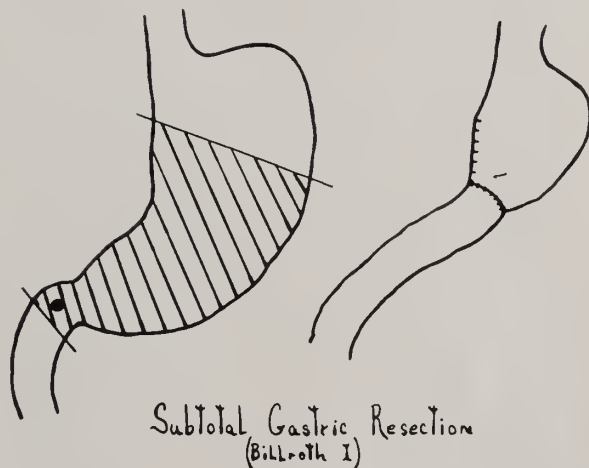


Fig. 6

is *not* simultaneously performed the incidence of recurrent ulcer is two to five times greater with the Billroth I procedure than with the resumption of intestinal continuity by gastrojejunostomy. It is important to re-emphasize that this operation properly carried out where indications are sound is associated with a favorable cure rate and with relatively few side effects. The mortality rate of 2 to 5 percent results mainly from the immediate hazards of duodenal dehiscence, duodenal fistula, and pancreatitis. Of course, the usual hazards of a major procedure exist, and these increase significantly when done in poor-risk patients under

of this procedure is gaining momentum. It has the great advantage physiologically of eliminating the cephalic as well as the antral phase of acid-secretion.⁹ It reputedly maintains gastric reservoir, lessens post-gastrectomy anemias, and there is the suggestion that it may diminish the dumping syndrome as well as post-operative weight loss. Although not disparaging the operation, it has the disadvantage, however, of having potentially the same mortality as that of subtotal gastric resection inasmuch as the duodenum must still be directly attacked and continuity resumed by either the Billroth I or II type of anastomosis. In this, as in subtotal

gastrectomy, a *sine qua non* is the *total* elimination of antral mucosa. Therefore, in essence its essential advantage would seem to be in the maintenance of a better nutritional situation post-operatively than that with subtotal gastric resection. One would not envisage a profound difference in the immediate mortality rate between this and higher gastrectomy for the duodenum is managed similarly. Should the long-term results as far as recurrent ulceration show an improvement over older methods, this, too, would be a strong point in its adoption. Dr. Scott and his associates have recently given such indication in a 13½ year follow-up study suggesting that there is likelihood that the recurrence of ulceration may be diminished comparatively over subtotal gastrectomy. If so, hemigastrectomy with vagotomy may soon become the operation of choice.

What procedure then should the surgeon adopt as his standard one? It seems only logical that he should occasionally employ at least three of the four modern modalities mentioned excluding only segmental resection. Regardless of the operation utilized, *careful selection*, particularly of the duodenal ulcer patient where there is some latitude, must be the most important factor in a successful result. There are many patients who for systemic or for psychological reasons should *never* have any surgical procedure for duodenal ulcer in the absence of commanding indications.²¹ Possibly one out of every two patients seen as a potential surgical candidate with duodenal ulcer should be eliminated where the *only* indication is *intractability*. To employ *any* type of procedure on these patients is to court disaster and further to discredit the operation. Other factors must enter into the decision as to the type of procedure. Certainly when one is dealing with massive hemorrhage, considerations differ from those in elective cases. It is rather superfluous to state that *proper* technique regardless of the operation selected is essential. It is a long-observed truism that the lesser procedures are apt to be adopted by

lesser surgeons. One of our residents in surgery at DePaul Hospital, who has recently spent several years in the West, stated several days ago that there, where the trend is to do more and more vagotomies with drainage procedures, he noticed many occasional surgeons had adopted this operation. These same surgeons had not attempted the more demanding procedures. It would seem, therefore, that the surgeon should select the technique which *in his hands* gives the best immediate and late results.

The operation which I employ as my *standard* procedure in most instances of peptic ulceration both for duodenal and gastric ulcer is high subtotal gastric resection with short loop antecolic gastrojejunostomy (modified Hofmeister) with a very small stoma. Why do I employ this procedure? Because it has been the most successful and the happiest operation in my surgical armamentarium. The dread complications cited by others have been minimal. The dumping syndrome for instance has been rare. I attribute this happiness with the procedure to:

1. Careful selection of the patients. It is obvious that in the face of massive hemorrhage or perforation one cannot be too selective. However, in the patient coming to *elective* surgery it is essential that he be carefully chosen considering such diverse factors as x-ray findings, symptomatology, and physical and psychological makeup, as well as his occupation, personality, social habits, and other traits. To ignore this aspect of the patient is to often condemn whatever operation one may adopt.

2. Careful indoctrination of the patient and his family *pre-operatively* as to what he is to expect as a *normal* sequence of post-operative events. It is vitally important if one is to have the patient pleased and the surgeon undisturbed to carefully explain to him and his immediate family *pre-operatively* the facts that temporarily he may have to eat small feedings frequently, that he may occasionally eructate bile, that he may have to exclude certain foods from his diet, or

that he may even occasionally have vasomotor symptoms immediately after eating. He should be advised to eliminate smoking indefinitely, although many return to it later without harmful effect. Modest imbibing seems harmless, although the reaction time to alcohol is greatly quickened. Some surgeons advise *post-operative* discussion of these problems. I personally feel that this is the wrong time and that one loses most of his effectiveness and any bargaining point whatsoever by waiting until *after the operation*, except in those cases of hemorrhage or perforation in which pre-operative discussion is obviously not feasible.

3. The employment of a *short proximal loop*. The physiological basis for this, of course, lies in the fact that the further one anastomoses the jejunum distal to the ligament of Treitz the less prepared the bowel is to accept the vicissitudes of wide thermal differences, roughage, highly seasoned foods, and other factors usually handled by the duodenum.

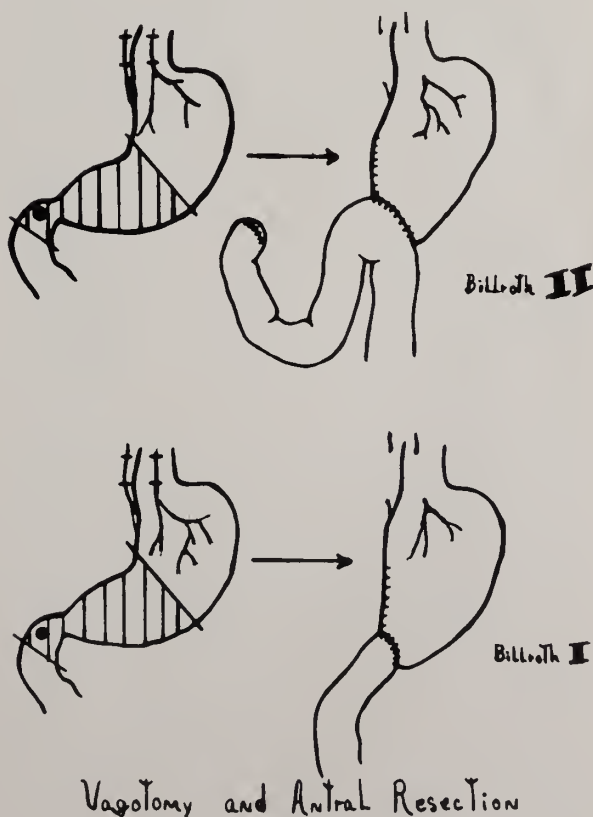
4. The employment of an extremely small stoma. It was shown many years ago by Kennedy et al.,¹⁵ and more recently by Abbott¹ and his associates that effective emptying of the gastric pouch depends entirely upon the diameter of the drainage tube, namely the intestinal lumen. Therefore, it seems rather illogical to construct a large stoma which magnifies the jejunal insult. Rarely, do I create an opening of more than 3 cm. in internal diameter. This seems also to more nearly approximate the normal pylorus. The incidence of stomal edema and late obstructive complications has not been increased by this diminution in the anastomotic opening. Of all the factors conducive to lessening the dumping syndrome I feel that this is the most important. It has never appealed to me to make a 5 inch anastomosis to a structure that has a lumen of not over 4 cm.

5. Division of or excision of omentum in obese patients in order to minimize tension on the antecolic loop which may result in angulation. This maneuver also enhances

the creation of a *shorter* afferent loop which is desirable.

By emphasizing these factors I have found high subtotal gastric resection to be followed by relatively few complications. Disastrous duodenal problems occur occasionally. Fortunately they are rare. The dumping syndrome is negligible and nutritional failures have been few. I am reluctant to abandon this procedure for a new one not yet *completely* evaluated, although there is indication particularly from several groups that hemi-gastrectomy with subdiaphragmatic vagotomy may ultimately prove to be the most effective operation with the lowest mortality, the fewest side-effects, and the best long-term results. When this has become well-established we should then adopt it as the preferable method of surgical attack on the peptic ulcer problem.

(The drawings used were modified from Herrington et al.¹²)



Vagotomy and Antral Resection

Fig. 7

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Vagotomy and Pyloroplasty

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The author believes this to be the operation of choice in the majority of peptic ulcer patients.

THESE REMARKS might be more appropriately entitled, with apologies to O Henry, "The Gift of the Vagi". And truly, vagotomy is in a sense, a gift—to the surgeon by permitting earlier definitive surgery, to the patient by offering maximum benefit with low mortality and morbidity. In discussing the procedure, however, I feel I am sponsoring an unwanted stepchild. In fact, I am afraid I was one of the few in either Society willing to accept the subject and support the merits of this stepchild with conviction. I do not offer this procedure, however, as a panacea to the ulcer problem. I am not trying to sell anything, or to convince anyone against his beliefs. I am simply giving you our experience and our evaluation of it from which you may draw your own conclusions.

Pyloroplasty is by no means a new procedure for facilitating emptying of the stomach having been used since 1886. Vagotomy likewise is not new but Dragstedt is credited with having revived its use in recent years combining with it gastroenterostomy as an emptying procedure. Although accompanied by low morbidity and mortality, long term results were not uniformly satisfactory. From this work, however, has evolved the combination of these two old procedures which thus far has proved more

satisfactory than either one alone or with other combinations.

Weinberg of Los Angeles has, during the past decade, combined vagotomy with pyloroplasty as an emptying procedure and used it in cases of bleeding ulcers. He was thereby able to carry out a definitive procedure of minimal mortality and morbidity. His success led others to use the same procedure and enlarge its scope. Farris of Los Angeles has reported its use in 164 of all types of duodenal ulcers with only four failures and Dorton of Lexington reports 300 cases (including 81 bleeders) with 1% mortality and 94% success.

We first became interested in the procedure of vagotomy and pyloroplasty, as did Weinberg, as a means of treating massively bleeding ulcers, first by controlling hemorrhage, second by adding a definitive procedure which a critically ill patient could tolerate. Inasmuch as pylorotomy was usually necessary in any event, closure in a transverse direction seemed just as simple as any other means and once active bleeding was controlled, the actual procedure of vagotomy added little to the insult of the operation. The results of this procedure seemed so satisfactory in the initial small group of cases that we began to utilize it in other ulcer syndromes, first the symptomatic lesion with minimal demonstrable radiological deformity, then the large indurated, adherent or posterior penetrating ulcer, then the obstructing lesions and finally the perforated anterior ulcer. In spite of anticipated difficulties such as leakage of the suture line or mediastinitis in the presence of perforation, these did not materialize. The only concession made to these conditions was drainage of the esophageal hiatal area in the latter.

Presented at the annual meeting of the Virginia Surgical Society and the North Carolina Surgical Association at Hot Springs, Virginia, April 13, 1962.

Now a word as to technique: The procedure is so well standardized that little need be added. We routinely use a midline incision extending to the left of the xiphoid and right of the umbilicus. The triangular ligament of the liver is usually divided although this is not always necessary. Extreme care is exerted to divide all branches of both vagi since it is our belief that failure in this respect is responsible for many cases of recurrence. Bleeding is never a major problem unless a major vessel is inadvertently mistaken for a nerve, or a large spleen is torn. To avoid this it is our practice to protect the spleen with a pad and to clip or tie all structures before dividing. We have routinely used the Heineke-Mikulicz pyloroplasty, extending the longitudinal incision from 3 to 4 cm. above and below the pylorus. Freeing the lateral attachments of the duodenum facilitates satisfactory closure without tension at the mid-point. A two-layer closure is done—the inner, a continuous 3-0 chromic catgut including the mucosa and submucosa, the outer a continuous 3-0 silk approximating the serosa and muscularis. A small tag of omentum can be attached to the suture line as an added safeguard against leakage. We routinely close without drainage, the only exception being in case of perforation.

Let us examine briefly the cases in which this procedure has been done, the indications, techniques, complications and results. They comprise 37 cases treated by three surgeons over a period of 18 months.

The predominant *symptoms* were pain in 24, obstruction in five, bleeding in six and perforation in two. Obviously those in the first two categories were treated as elective procedures.

Additional procedures employed as indicated by operative findings were suture of the ulcer base for control of bleeding in four, repair of hiatal hernia in two, resection of redundant antral mucosa in two and cholecystectomy in one. These procedures were added only where it was felt that the condition might prove symptomatic in the future,

and while their performance prolonged operating time by a few minutes, there was no appreciable increase in morbidity.

The *operating time* computed on an average with all three surgeons and *including* the additional procedures was one hour and 40 minutes. Needless to say, as our experience has increased, this time has been shortened, so that in uncomplicated cases the procedure requires less than one hour.

Morbidity as measured by the average hospital stay after operation is seven days. Many patients have been discharged as early as the fifth day after operation and some even on the fourth day when they live in the vicinity and can return as an outpatient for dressing and suture removal.

There were five postoperative *complications* in the group of 37 cases, one each of phlebitis, wound infection (mild), atelectasis, wound dehiscence and gastric retention. None of these prolonged the hospital stay overly long and were of no permanent significance.

The *results* of treatment as measured categorically as good, fair and poor were as follows: 34 (92%) had good results as determined by relief of symptoms, digestive ability, and work capacity. Three had only fair results which bear scrutiny: one had persistent vomiting but re-exploration revealed no obstruction and psychiatric investigation revealed a deep psychogenic factor. A second patient had one episode of recurrent bleeding which promptly responded to conservative management. The third suffered a recurrence of pain whenever she took aspirin but was promptly relieved when she omitted this habitual medication. None had what could be classed as poor results or failures.

You may well ask what will be the long term results in respect to recurrence and indications for further surgical procedures. We frankly admit we do not know, since none of this small group of patients had gone more than 18 months. A year from now we might be forced to report an abnormally high percentage of complications, recurrent

ulcers and second operations, so high in fact that the procedure might be abandoned. Nevertheless, the experience of others with larger series of cases, followed five years or longer indicates that when properly done the results approximate those of any other type of operation and we have no reason to believe that ours will be any less satisfactory. However, when one can carry out a definitive procedure which carries with it a negligible mortality, minimal morbidity, permits the patient to leave the hospital in less than a week, eat normally and return to his regular occupation in one month or less, one tends to minimize late results and both patient and surgeon are willing to accept the arbitrary 10% chance of a second operation. Furthermore, the procedure is not an irreversible one and does not preclude a resective procedure should that become necessary.

It has been said that "little surgeons like

little operations". I presume that this makes my patients "little patients" also. But even "big patients" and "big doctors" will prefer a little operation when reasonable assurance of freedom from symptoms and the ability to live a normal, active life can be offered.

I would not be so bold as to claim that this is the surgical procedure for all ulcer problems. There are undoubtedly lesions which *should* be removed, especially those with a question of malignant potential, others in which vagotomy and pyloroplasty cannot be safely carried out. For these a resection is preferable. However, until proved that vagotomy and pyloroplasty is an unsatisfactory procedure, we intend to utilize it as a simple yet effective means of surgically treating the majority of duodenal ulcers.

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How Much Sleep?

The amount of sleep necessary for "a good night's sleep" varies from person to person but it's easy to tell the next day if one did get enough, according to Nathaniel Kleitman, Ph.D., Santa Monica, Calif.

Writing in the question and answer section of the March 16th Journal of the American Medical Association, Dr. Kleitman said the amount of sleep on which one can "get by" varies from person to person and probably from time to time but there is a minimum sleep requirement. "A simple index that the minimum requirement has been met is one's ability to wake up spontaneously at the usual getting up time, as

well as having freedom from drowsiness in the afternoon."

Dr. Kleitman cited a study of the effect of increasing amounts of sleep on performance of various physical and mental tests the following afternoon between 3 and 5 P.M. when a person's efficiency is at its highest.

The study showed that performance improved sharply as the amount of sleep was increased from one to six hours. However, the rate of improvement was much smaller when the duration of sleep was increased to 8 hours and there was no further improvement in performance as the length of sleep was extended to 10 hours.

The Management of Bleeding Peptic Ulcers

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There are patients with massive upper gastro-intestinal hemorrhage who can be salvaged only by surgery.

SINCE APPROXIMATELY 1940 surgery has gradually come to assume an accepted place in the management of selected patients hemorrhaging from peptic ulceration of the stomach and duodenum. At least most physicians and all qualified surgeons felt this to be true until Wangenstein¹¹ began to present his work on Local Gastric Cooling.

Through the years literally volumes have been published on the various aspects of the problem. This is not surprising when we realize that at present approximately 60% of the 10,000 to 12,000 yearly deaths in the U. S. from peptic ulceration are from hemorrhage.¹²

Upper gastro-intestinal hemorrhage results from a peptic ulcer in from 60% to 85% of cases and from esophageal varices in from 10% to 25%, with tumors, gastritis, and unexplained causes accounting for the remainder. Reports vary as to the proportion of gastric and duodenal ulcers responsible for massive hemorrhage from the upper G. I. tract. Stewart¹⁰ in reporting a series of 193 cases operated on for massively bleeding peptic ulcers found 84, or 43%, to be from duodenal ulcers, 71, or 37%, to be from gastric ulcers and nine from both gastric and duodenal ulcerations. There were eight

stomal ulcers in this group and the site of bleeding could not be determined in 21 cases. The sites of massive bleeding in 150 unselected consecutive patients have been reported by Mage⁷ from the Beekman-Downtown Hospital in New York. Here we find duodenal ulcer as the cause of hemorrhage in 61 cases or 41%, gastric ulcer as the cause in 24 or 16%, and stomal ulcer in seven cases or 4.6% with the bleeding in 58 cases being due to causes other than peptic ulceration.

As physicians our primary responsibility when presented with the patient bleeding massively from a peptic ulcer is to preserve life and secondly to choose that method of treatment most likely to cure permanently the basic pathology with minimal side effects as long as it does not significantly alter the results of our primary objective. It is almost impossible to compare the results of medical and surgical treatment since before 1940 most patients coming to surgery represented prolonged medical failures and were practically moribund before the surgeon was called to try and salvage a well nigh hopeless situation. However we do find mortality reports of modern medical treatment to be around 15%.^{6,14} In 1958 Karlson⁶ reported an interesting and brave study on a series of 130 patients bleeding massively from peptic ulcers. These patients were divided into three groups, Group I being treated medically, Group II being operated on immediately as soon as adequately transfused, and Group III being operated on selectively as judged by the "usual criteria" generally accepted in determining patients for operation. The mortality in the non-operative group was 14%, 11% in the group operated on immediately, and 14% in the selectively operated group.

It is interesting in reviewing reports from various institutions to note the differences

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in the percentages of patients bleeding massively from peptic ulcers who were judged to require emergency surgery. These figures vary from 0% for the past 4½ years in Wangenstein's¹² series to as high as 62.5% in the group reported by Farris.³ The 0% referred to by Wangenstein is for duodenal ulcers only. Recently of nine massively hemorrhaging gastric ulcers two required operation.⁸

At the present time it seems to be the consensus of opinion that operation on selected patients will salvage a significant number who would not otherwise survive if treated medically. In view of this our problem is to try and determine which operative procedure will save the individual patient and at the same time cure his ulcer.

It is correct, I believe, to say that at the moment the majority of surgeons are performing the classical two-thirds to three-quarters sub-total resection in dealing with this problem. However, we are all aware of the reports on the results obtained from vagotomy and pyloroplasty,^{2,3} vagotomy and antrectomy,⁵ and gastric hypothermia^{8,11} which has previously been mentioned.

These studies are extremely interesting and especially when the surgical mortality and ulcer recurrence rates are compared.

In a review of five series totaling 473 patients subjected to sub-total gastrectomy for massive hemorrhage there was an average mortality of 16%. Harvey⁴ at the Presbyterian Hospital in New York found a recurrence rate of 7% in their group of 72 patients treated by this procedure.

In a similar series from Vanderbilt University treated by vagotomy and antrectomy, Herrington⁵ reported a 5.3% operative mortality with a recurrence rate of only .38% in 152 patients.

Dorton² in reporting 100 patients treated by vagotomy and pyloroplasty had no deaths and a recurrence rate of 6.5%. In a smaller group of 48 patients subjected to the same operation Farris³ had an operative mortality of 4.6% and a recurrence rate of 6.6%.

We all look forward to reports of further

experiences in the use of local gastric cooling in the control of peptic ulcer hemorrhage. In 1959 Wangenstein¹¹ presented a series of 14 patients bleeding massively from duodenal ulcers and two from gastric ulcers treated by local cooling. All stopped bleeding promptly but bleeding recurred in three of these patients all of whom had been under massive steroid therapy or had undergone severe trauma.

At a recent Watts Symposium¹² in Durham, Wangenstein stated that there had been no emergency operations for upper gastro-intestinal hemorrhage from duodenal ulcer in his department for 4½ years. Certainly this report cannot be dismissed.

The most recent summary of the experience in gastric hypothermia from the University of Minnesota Hospital reveals 16 patients massively bleeding from duodenal ulcers and five from erosive gastritis to have been controlled. As previously stated, seven of nine patients bleeding from gastric ulcers were controlled. Two bleeding from esophageal ulcers were likewise controlled. The further experience reported from this hospital confirms their belief that steroid induced ulcers and so called stress ulcers tend to rebleed and therefore operation should be performed in the immediate post cooling period.⁸

In our 80 bed community hospital in Henderson, North Carolina, between January 1, 1956, and January 1, 1961, there were total admissions of 20,282 patients. During this five year period the diagnosis of peptic ulcer was made 462 times. Of this figure 380 were duodenal, 31 gastric, nine pyloric channel, one marginal, and in 41 patients the site was undetermined. Of this group hemorrhage of some degree was found in 59 patients with duodenal ulcer, five with gastric ulcer, one with pyloric channel ulcer, and one on two occasions with a marginal ulcer. Massive bleeding was encountered in 11 patients with duodenal ulcer and in one with a gastric ulcer. Nine patients were subjected to surgery while bleeding from a duodenal ulcer, two while bleeding from a

gastric ulcer, and one while bleeding from a marginal ulcer. Emergency operation was carried out for massive hemorrhage in seven patients with duodenal ulcers and on one with a gastric ulcer. Of the 12 patients operated on while bleeding of some degree was taking place 11 had 2/3 to 3/4 sub-total resections, one very elderly man bleeding massively had a vagotomy and pyloroplasty, and one patient who had previously had a sub-total resection for bleeding underwent vagotomy alone for hemorrhage from a marginal ulcer. There were two deaths, both following sub-total resection for massive hemorrhage, one from a gastric and one from a duodenal ulcer.

To attempt to categorically list the indications for surgical intervention for peptic ulcer hemorrhage is practically impossible. Varying criteria are used in reporting all series of cases, and I believe it is true that on the best disciplined services the individual patient will be the determining factor in the decision of whether or not operation is necessary rather than a printed list of operative indications. This is as it should be. Is not the rapidity of hemorrhage and its continuation more important than whether the patient is 40 or 50 years of age, even though we know that as a group the younger patients are more likely to cease bleeding than the elderly? Is the age of the ulcer or the age of the patient the more important factor in determining whether or not hemorrhage will cease? Should the presence of atherosclerosis be a determining factor in the decision to operate when at least one pathologist reports that he has not been able to demonstrate its presence in the arteries supplying the stomach and duodenum in a series of 327 gastrectomy specimens?⁹ These are questions that do arise when we try to clarify the problem in our own mind.

Certainly adequate blood replacement is the first step in the management of these patients with an attempt to establish the source of bleeding being next in importance. I have seen no ill effects from a judiciously employed roentgen study to help in this re-

gard when needed. A trial of well regulated conservative treatment should follow unless definite indications for immediate surgery are present. We are all aware of the necessity for operation for hemorrhage in the presence of pyloric or duodenal obstruction or perforation. The likelihood of the gastric ulcer continuing to bleed is well known. Close observation of the patient by an experienced surgeon capable of prompt action and not limited by adherence to a standard operative procedure offers the greatest hope in further reducing the mortality of this complication of peptic ulcer.

Discussion

There is no universal agreement as to the best operative procedure for the patient hemorrhaging from a peptic ulcer. Most surgeons still seem to rely on sub-total resection as the operation of choice. Further experience and reports from more clinics in the use of vagotomy and antrectomy, vagotomy and pyloroplasty or gastric hypothermia will help to answer this problem.

In view of the low mortality and exceptionally low recurrence rate from vagotomy and antrectomy I believe we can expect this procedure to be used by more and more surgeons instead of sub-total resection. Until much more experience is gained it seems that it is logical to assume that vagotomy and pyloroplasty will find its widest field of usefulness in the exceedingly poor risk patient. Whether or not gastric hypothermia will do away with the necessity of emergency operation for massive hemorrhage remains to be seen.

Summary

This report has dealt with the problem of management of the patient with a bleeding peptic ulcer. The incidence of this complication has been presented and the results of various methods of treatment have been reviewed. Emphasis has been placed on massive hemorrhage rather than on the patient bleeding slowly or on those who have bled

and stopped. The care of this latter group is surgically comparable to any patient undergoing elective operation. The experience from a small community hospital has been presented.

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Hair Sprays Okayed

Hair sprays do not constitute a health hazard, according to a report in the May *Today's Health* magazine, published by the American Medical Association.

Although there have been a number of reports purporting to show that lung damage has resulted from the use of hair sprays, it said, a relationship has not been definitely established.

"In experiments sponsored by the Food and Drug Administration, exposure of laboratory animals has failed to reveal any relationship between the use of hair sprays

and lung damage. More recently, industrial laboratories have reported in detail on well-conceived experiments that appear to lead to the conclusion that hair sprays do not constitute a health hazard.

"A number of long-range studies are under way involving hairdressers, who are exposed to hair sprays in their normal occupation. Preliminary reports indicate little evidence to substantiate a link between the sprays and thesaurosis [the accumulation of substances in the lungs] even among these highly exposed subjects."

Mesenteric Arterial Occlusion

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The frequency of mesenteric arterial occlusion will increase as the percentage of senior citizens in our population rises. The diagnosis and management of this entity is discussed.

ONE OF THE MOST DEVASTATING and exasperating problems that faces us in the surgical management of the aging patient is mesenteric arterial occlusion. This entity carries a staggering mortality, presents an elusive diagnostic picture, and frequently poses technical problems that may tax the skill and ingenuity of even the most experienced and informed surgeon. Proven cases of mesenteric vascular occlusion at the Medical College of Virginia, noted from 1949 to 1959, were reviewed. Personal experiences were reevaluated. Recent pertinent literature was surveyed and postmortem dissections were performed to clarify some of the problems in the diagnosis and management of the patient with occlusive vascular disease of the bowel.

Anatomy and Physiology

The blood supply of the intestine is abundant but variable. (Fig. I) The celiac axis, superior mesenteric and inferior mesenteric arteries constitute the main channels with important collaterals coming from the

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hypogastric, inferior phrenic, superior epigastric, and lumbar arteries. Any or all of the main channels may be occluded due to vascular pathology. The literature has reference to cases with extensive occlusive mesenteric vascular disease with no apparent gangrene and, conversely, massive gangrene has occurred in the presence of patent arterial channels. Shaw noted that one-third of the cases reviewed with intestinal ischemia had no significant occlusive vascular lesion. The concept of functional arterial insufficiency, as well as organic insufficiency, is now well

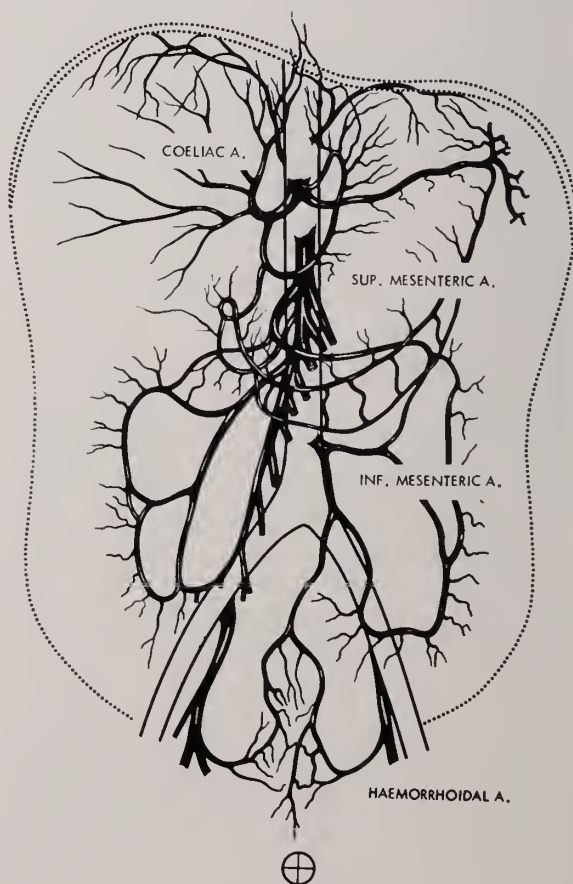


Fig. I. Blood supply of the intestine.

accepted. Ende first called attention to the occurrence of vascular insufficiency of the intestine following cardiac decompensation,

and Hardy described five conditions in which bowel infarction might occur without anatomical block. (Fig. II) The com-

FIGURE II

CAUSES OF MESENTERIC INFARCTION WITHOUT ORGANIC ARTERIAL OCCLUSION

- 1. Postcoarctation Syndrome
- 2. Shock (any cause)
- 3. Norepinephrine
- 4. Congestive Heart Failure
- 5. Aortic Insufficiency

mon denominators in all of these conditions are diminished blood flow and/or arterial vasospasm whatever the cause.

Pathology

A review of collected series of cases of mesenteric vascular occlusion and an analysis of our own experience at the Medical College of Virginia and at the McGuire VA Hospital reveals that organic vascular insufficiency of the bowel may be secondary to arterial or venous occlusion. Arterial obstruction leading to infarction is more common than venous. However, venous occlusion is more devastating as shown by animal experiments and clinical observation. Most cases of mesenteric infarction are due to arterial thrombosis. Etiology of vascular insult based on resected bowel is, however, unreliable. In the late stages of gangrene, regardless of the genesis, one finds arterial and venous occlusion. The causes of thrombosis are varied (Fig. III) with arterio-

FIGURE III

MESENTERIC VASCULAR OCCLUSION

ARTERIAL

Thrombosis	Embolism
Arteriosclerosis	Auricular Fibrillation
Thromboangiitis Obliterans	Endocarditis
Periarteritis Nodosa	Myocardial Infarction
Trauma	Aortic Wall Thrombi
Blood Dyscrasia	Catheterization Thrombi
Cardiac Decompensation	
Aneurysm	

VENOUS

Portal Hypertension (Cirrhosis, Neoplasm, Heart Failure)
Migratory Thrombophlebitis
Septic Phlebitis
Trauma
Blood Dyscrasia

sclerosis being the most common pathological condition noted. Embolism is seen most

often following auricular fibrillation or myocardial infarction. We have, however, seen evidence of embolism to the mesenteric vessels without any definite pathology in the heart, but with extensive thrombotic disease of the wall of the aorta. Since one cannot clinically differentiate arterial from venous occlusion, it is pertinent to realize that portal hypertension is a relatively frequent cause of occlusion of the mesenteric or portal vessels and that such an acute occlusion usually leads to rapid intestinal infarction. The superior mesenteric artery is the vessel most frequently involved with occlusive disease. Arteriosclerotic plaques that block the superior mesenteric artery usually occur at the ostium of the vessel or within the first one or two centimeters. (Fig. IV) Anatomical dissections have

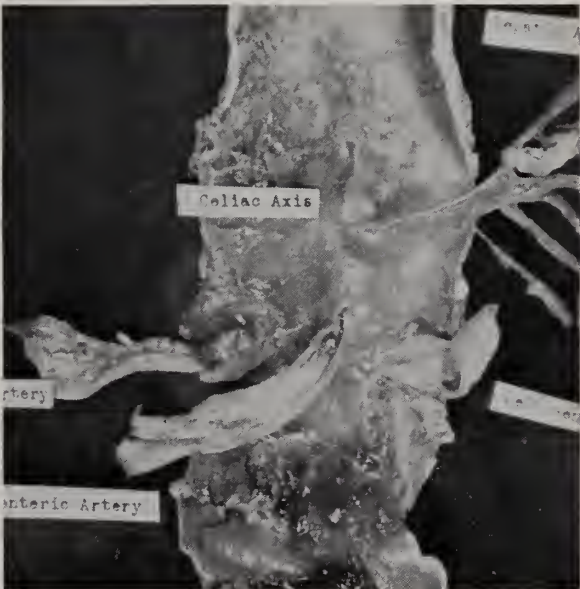


Fig. IV. Postmortem dissection of the superior mesenteric artery showing occlusion at the point of origin. Distal vessel appears normal.

shown that the vessel distal to this point of sclerotic occlusion is frequently of good caliber and not involved with disease. The instance of distal thrombosis following acute or subacute occlusive disease of the proximal superior mesenteric artery is also rather rare, giving a more favorable condition for restorative surgery. Emboli likewise usually occlude the superior mesenteric artery in the first one to three centimeters, an area easily

accessible to approach from above or below the transverse mesocolon. The oblique angle of origin, the large ostium, and the parallel course of the superior mesenteric artery to the aorta make this vessel more susceptible to embolization. Cases of inferior mesenteric artery occlusion with resulting left colon ischemia have also been reported.

Considering the intimate collateral potential of the major mesenteric vessels, it is difficult to prognosticate the area or extent of infarction after occlusion of any arterial channel going to the intestine. Chiene reported the autopsy findings in a patient with complete occlusion of the celiac axis, superior mesenteric artery, and inferior mesenteric artery with no history of intestinal angina and with no evidence of bowel infarction. The celiac axis has occasionally been removed during resectional surgery for neoplasms in the upper abdomen. The inferior mesenteric artery is usually removed with aneurysmectomy of the distal aorta and only occasionally does one see ensuing ischemia of the left colon. There have been a few reported cases of excision of a patent, functional superior mesenteric artery without ensuing bowel infarction. To illustrate the collateral potential of the bowel, a patient who had had an aneurysmectomy of the infrarenal abdominal aorta was noted to quickly deteriorate postoperatively. His inferior mesenteric artery, a moderately large and patent vessel, had been removed with the aneurysm. The patient died 60 hours postoperatively, and at postmortem dissection was found to have subacute occlusion of the superior mesenteric artery with old complete occlusion of the celiac axis. The distribution of gangrene was entirely limited to the midgut. Hypogastric arteries were functional with large middle hemorrhoidal vessels. The main intestinal flow undoubtedly had been removed with excision of the aneurysm and inferior mesenteric artery.

The sequelae of mesenteric arterial occlusion, organic or functional, are extremely variable. (Fig. V) Patients may have acute or subacute occlusion of a major channel and

be entirely asymptomatic. Others may overcome the acute sequelae only to later develop postprandial distress with malabsorption and some patients may exhibit severe acute symptoms with eventual infarction of the intestine. The resulting pathology following vascular occlusion of the bowel depends on the initial integrity of the intestine, the collateral circulation, and the general status

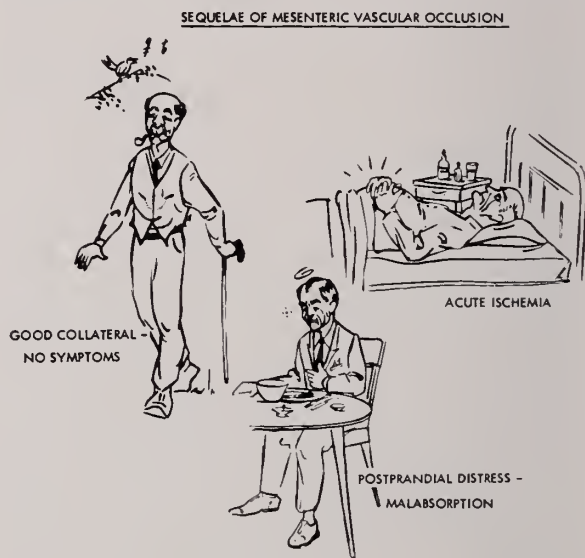


Fig. V.

of the cardiovascular system. A minimal occlusion with a poor cardiac output may be more lethal than a major acute obstruction with good collateral flow. Laufman has demonstrated the intense vasospasm that may accompany acute mesenteric arterial occlusion and has shown that bowel changes after inadequate flow may progress from acute contraction to relaxation to progressive distention. Experimentally, the mucosa of the intestine is most severely affected by ischemia. Cases have been reported of spontaneous cure after patients have passed mucosal casts. An increasing number of patients have been seen with stenotic segments of intestine presumably due to vascular insult that has been weathered.

Clinical Features

Although Tiedeman first described the entity of mesenteric occlusion in 1843, it was not until 1934 that this condition was

clearly delineated from a clinical standpoint with diagnostic features adequately stressed. A review of the cases of mesenteric occlusion treated at the Medical College of Virginia from 1949 to 1959 was undertaken. Twenty-four cases were accepted for inclusion into this study. Many clinically acceptable cases were deleted because of insufficient pathological evidence. The mortality rate in this series was staggering in that 23 of 24 patients died. Most of the patients were over 60 years of age (21 of 24) and most had concomitant cardiac or cardiovascular disease consisting of hypertension, auricular fibrillation, old or recent myocardial infarction, cardiomegaly, or congestive heart failure. There were two cases of previously proven Buerger's Disease, both showing thrombosis of the superior mesenteric artery at postmortem dissection. Only three patients in this series had venous thrombosis. All the patients in this series presented with abdominal pain, nausea and vomiting, or diarrhea. The white blood count was most often elevated beyond expectation, considering the meager abdominal findings and the normal to slightly elevated temperature. X-rays of the abdomen were not diagnostic. The usual interpretation suggested incomplete small bowel obstruction or ileus. Nineteen patients were explored. Twelve had resection, usually of the midgut derivative. Six patients were closed without resection because of extensive gangrene of the small bowel and colon. One patient was treated by cecostomy and long tube decompression because there were spotty areas of anemic infarction without clear-cut demarcation at any point. No patient in the series had arterial exploration and, in most, no mention was even made of the vascular integrity of the small or large bowel.

Diagnosis

From the short series of cases presented and the collected experience of others, the diagnostic features of mesenteric vascular occlusion should be divided into acute, subacute and chronic stages. The patient

with acute or subacute occlusion will most often present with sudden onset of abdominal pain. The pain may be generalized and colicky. It may be limited to the right abdomen suggestive of appendicitis or, if primarily the inferior mesenteric artery blood supply is occluded, the pain may be limited to the left lower quadrant. There may be mild abdominal tenderness, especially at first, but the tenderness may be rather extreme after the development of peritonitis. The pulse is usually elevated and the white blood count is most often elevated beyond expectation. Nausea and vomiting is a frequent presenting symptom with diarrhea being less constant. Many of the patients will have guaiac-positive stools or even frank blood per rectum. X-rays will occasionally suggest ileus. There have been some cases misdiagnosed as small or large bowel obstruction. This was particularly true when the left colon was predominantly involved in the ischemic pathology. Most of the patients will have had or will have cardiovascular disease of one type or another. An antecedent history of previous gastrointestinal disease may occasionally be elicited. In those patients that have moderately severe abdominal tenderness, peritoneal tap may reveal bloody fluid suggestive of infarction of the bowel and, in those patients having ischemic changes limited primarily to the left colon, sigmoidoscopy may reveal mucosal changes that may on occasion mimic colitis.

Chronic occlusion of the mesenteric blood supply is considerably more evasive. Postprandial abdominal pain may be the only symptom. There may be slight, vague abdominal tenderness. Some patients with moderately severe ischemia may even show a malabsorption syndrome. X-rays of the abdomen are most often inconclusive. Narrow segments of the small intestine may be noted on barium study and may simulate ileitis. When the index of suspicion is relatively high, aortography will be our best diagnostic tool in the chronic stage. We have on a number of occasions investigated the

vascular pattern of the bowel by performing aortography in a PA and lateral position, using catheters passed either prograde through the brachial artery down the aorta, or retrograde in the Seldinger technique from the femoral artery. (Fig. VI) It is

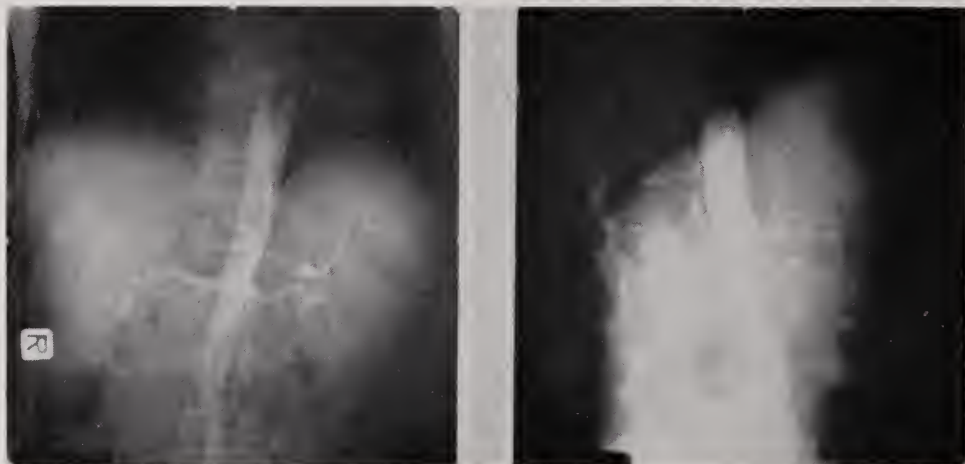


Fig. VI. Aortogram showing celiac axis and superior mesenteric arteries.

difficult to demonstrate the inferior mesenteric artery takeoff; however, the celiac axis and superior mesenteric artery can be adequately visualized. Patients with chronic occlusive mesenteric artery disease will frequently show cardiovascular disease that may be a contributing factor in the genesis of their symptoms.

Treatment

Prior to 1951, the major surgical modality employed in the treatment of mesenteric vascular occlusion was resection of infarcted intestine, the first such resection being done by Elliott at the Massachusetts General Hospital in 1894. In 1904 Jackson, Porter and Quinby stressed the importance of resection for infarcted bowel, but reported an operative mortality of 92%. With better appreciation of the hemodynamics of circulation, with newer antibiotics, with wider experience in the management of patients in shock following infarction of the intestine, and with recent developments in vascular surgery, new and wider horizons have become available. (Fig. VII) The cardinal virtue in the treatment of any acute or subacute vascular occlusion is, of course,

early operation and this will depend on the index of suspicion of the examining physician. Once the diagnosis is made, supportive treatment is of the essence. Large doses of colloid and fluids may be mandatory. Antispasmodics have been shown to have

some place in the management of the associated vasospasm that follows experimental arterial occlusion. Antibiotics have increased the salvage in shock-like states following gangrene and peritonitis and have been shown to lessen and, occasionally, prevent infarction of ischemic bowel. Decompres-

FIGURE VII

TREATMENT OF MESENTERIC VASCULAR OCCLUSION

1. Early Operation
2. Supportive Treatment
 - Colloid
 - Fluids
 - Antispasmodics
 - Antibiotics
 - Decompression
 - Steroids
 - Cardiovascular Compensation
3. Mesenteric Vascular Surgery
 - Embolectomy
 - Thromboendarterectomy
 - Bypass
4. Wide Intestinal Resection
5. Anticoagulants
6. ? Second Look

sion of the intestine enhances intraluminal flow, thereby increasing the blood supply that is potentially available. Steroids have been utilized increasingly in gram-negative septicemia and shock and seem to have some place in selected cases of mesenteric vascular occlusion. Of equal importance is the prob-

lem of cardiovascular compensation, realizing that stroke volume and perfusion through the existing mesenteric vessels has to be ideal to allow for optimum circulation. Large doses of heparin have been reported to have aborted impending gangrene of ischemic bowel. Laufman showed this experimentally by noting increased survival in those animals heparinized prior to occlusion of mesenteric vessels. Of those patients coming to exploration, adequate appraisal of the vascular network of the bowel has to be undertaken. If an embolus is present in the superior mesenteric artery, it can be removed with facility. Those cases, however, having arteriosclerotic occlusion of the superior mesenteric artery at or near the origin of the vessel may require thromboendarterectomy. If this is not possible, bypass from the aorta or the splenic artery to the superior mesenteric artery is practical. (Fig. VIII) Similar procedures may be done

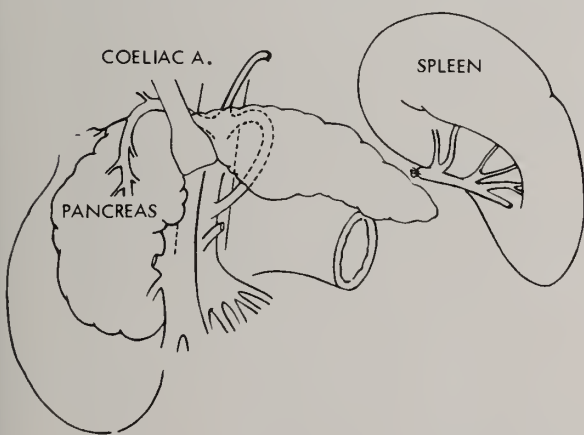


Fig. VIII. Sketch showing anastomosis of end of splenic artery to side of superior mesenteric artery.

on the inferior mesenteric artery, although this vessel is per se infrequently the cause of symptoms and is, moreover, usually of such small caliber that reconstructive surgery is impractical. Prior to the resection of any intestine, it is mandatory that an attempt be made to enhance blood flow. Seemingly irreversible gangrenous bowel may revert to normal after restoration of arterial and venous circulation, and, if bowel has to be resected, a more competent arterial system will insure a better functional result

of that portion of the intestine that remains. If vascular surgery is not possible and the intestine appears irreversibly damaged, wide resection is then the treatment of choice. A number of cases of survival with massive resection have been reported. Excision of 50 to 60% of the small bowel can be well tolerated. Larger resections present defects in absorption in the postoperative period. However, many of these problems can be managed with selected drugs and careful dietary intake. Systemic anticoagulation appears essential during and following restorative surgery on the arterial tree and should also be used after massive resections to cut down the propagation of intravascular clot. Anticoagulation should be maintained for one week postoperatively, or until the patient is eating and ambulatory. Following the suggestion of Shaw, it appears reasonable to consider second-look operations, within 24 hours, on patients who have had restorative arterial surgery or resections that entail leaving bowel of questionable viability. It is readily apparent that a combination of all the procedures and agents mentioned will be necessary in most patients to insure an adequate outcome.

Conclusion

As we face an enlarging geriatric practice encompassing an increasing number of patients with heart and peripheral vascular disease, we should be prepared to see and treat the sequelae of mesenteric arterial occlusion. This disease entity will always pose a challenging problem because it may present such an elusive, chronic, subacute or acute clinical picture and because the subjects afflicted with this disorder will usually be elderly patients with moderately severe concomitant cardiovascular disease. The realization that diminished intestinal blood flow may be anatomical and/or functional further complicates our management and makes it mandatory that we critically evaluate and treat the entire patient. The keystones of a successful regimen will continue to be early management and vigorous sup-

portive therapy, early operation, mesenteric vascular surgery where possible, and adequate intestinal resection where necessary. Only with such an approach will we be able to lower mortality and postoperative morbidity.

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A Study of MCV Graduates for the Years 1951-60

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This study reveals much of the professional activity of those graduating from MCV between 1951 and 1960.

FOR SOME TIME the faculty of the School of Medicine of the Medical College of Virginia has felt the need to study the medical school graduate in relation to his choice of career within medicine. It was decided that the best approach to this question was to establish what the students of the Medical College of Virginia have been doing since graduation. Graduates of the past ten years were asked to cooperate in this endeavor.

The participating alumni were advised that the results of the study would be sent to them as soon as they were completed. This report is the result of this compilation.

Research on questionnaire studies has revealed that returns on questionnaires of more than one page are reduced by almost 25 per cent. Since the first objective was to obtain as large a return on the questionnaires as possible, it was decided that a one-page questionnaire should serve the purpose. This, however, precluded the inclusion of many questions.

A return of 90.4 per cent on all the questionnaires sent was obtained. As of this writing individual questionnaires still trickle-in and it is estimated that ultimately 92 per cent of all the questionnaires sent will be returned. This is an unbelievable

and highly commendable return on a questionnaire study.

As to the tables that follow, only a few comments will be made. The data are self-explanatory and too much elaboration could easily lead to conclusions that are not warranted by the facts.

Table 1 shows the per cent of question-

TABLE 1
M. C. V. GRADUATES 1951-60
Per Cent of Each Graduating Class That
Returned Completed Questionnaires

Year of Graduation	Per Cent Returned Questionnaires
1951	86%
52	96%
53	86%*
54	96%†
55	90%‡
56	88%*
57	88%†
58	89%
59	93%‡
60	88%*
TOTAL	90%

*No addresses available for 2 graduates.

†No addresses available for 4 graduates.

‡No address available for 1 graduate.

naires returned by each graduating class. All of the data reported in Tables 2-12 are based on these returns.

As was mentioned, the return of 90.4 per cent on the questionnaires sent is a remarkable return. As a result of this response it appears safe to assume that this study represents an accurate picture of the M.C.V. alumni for the years 1951-60.

Table 2 and Figure 1 compare the M.C.V. and national trends in graduates selecting specialties or general practice careers. In light of many popularly held opinions, the data in Table 2 and Figure 1 are most re-

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vealing. When compared to national averages, some objective comparisons can be made.

TABLE 2

M. C. V. GRADUATES 1951-60

Per Cent of Graduates Who Are in General Practice, Specialty Practice and Teaching and Research

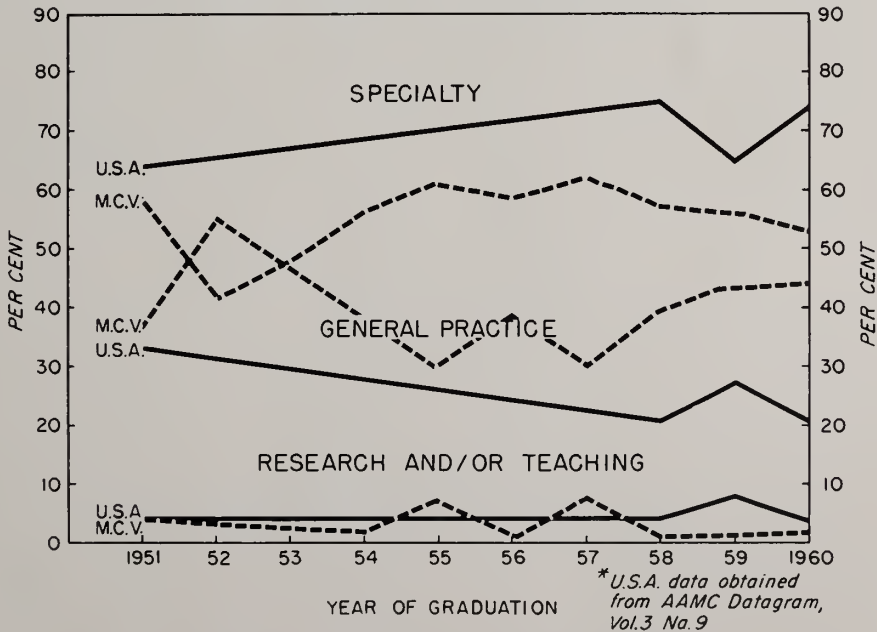
Year of Graduation	Per Cent in Specialty	Per Cent in General Practice	Per Cent in Teaching and Research	N
1951	59%	37%	4%	82
52	41%	55%	3%	94
53	48%	46%	3%	82
54	57%	38%	2%	90
55	61%	29%	8%	87
56	59%	39%	1%	84
57	62%	30%	7%	80
58	57%	40%	1%	85
59	56%	43%	1%	84
60	53%	43%	2%	82

Based on Figure 1 over the ten-year period approximately 40 per cent of M.C.V. graduates elected general practice as compared to 25 per cent of the nation as a

whole. Of the individual classes the Medical College of Virginia's 1952 graduates reversed the national pattern. Of that year's class, 55 per cent are in general practice; 42 per cent in a specialty; and 3 per cent are actively involved in a full-time career of research and teaching. Of the nation's graduates of that same year, 32 per cent are in general practice while 65 per cent are in a specialty. Likewise, 3 per cent are in research or in teaching. The peak year when the greatest percentage of Medical College of Virginia graduates elected a specialty over general practice was 1957. Of that year's class, 30 per cent are in general practice, and 62 per cent in a specialty. Since that time the per cent electing to go into a specialty has continuously decreased while the per cent going into general practice has increased.

Never during the past ten years has the per cent of M.C.V. graduates electing a

FIGURE 1
PER CENT OF U.S.A.* AND M.C.V. GRADUATES MAKING
SPECIFIC CAREER CHOICES IN MEDICINE



whole. While approximately 70 per cent of the nation's medical school graduates elected a specialty, 56 per cent of the graduates of the Medical College of Virginia did so.

specialty been larger than the national average. Likewise, never during the past ten years has the per cent of M.C.V. graduates going into general practice been smaller than the national average.

Both the national and the M.C.V. per cent average going into research and/or teaching are about equal at 4-5 per cent.

Table 3 deals with the number of grad-

medicine and public health. It should be interesting to watch the number going into aviation or space medicine in the future.

Table 5 shows the type of hospital in

TABLE 3
M. C. V. GRADUATES 1951-60
Number of Graduates Who Completed a Residency and Mean Number of Years Completed;
Number Currently in a Residency, Mean Number of Years Completed
and Mean Number of Years Still Planned

Year of Graduation	Number Completed a Residency	Mean Number of Years in Residency	Number Currently in a Residency	Mean Number of Years in Residency Completed to Date	Mean Number of Years Still Planned
1951	48	3.2	3	2.7	1.0
52	38	2.9	7	2.0	1.9
53	39	3.3	5	2.8	1.2
54	49	2.9	8	2.0	1.5
55	48	3.2	10	2.7	1.6
56	30	2.9	23	1.9	1.4
57	30	2.7	31	2.1	1.6
58	8	1.9	43	2.4	1.4
59			45	1.7	1.8
60			42	1.0	2.6

uates who have completed or are currently in a residency and the mean number of years spent in the residency. If the number who have completed a residency is combined with the number who are currently in a residency the pattern is similar to the data in Table 1; i.e., there has been a general decrease in the number going into a residency since the peak year of 1957. For those who have *completed* a residency, there seems to be no pattern in the mean number of years spent in a residency. It appears to be cyclic.

However, if the mean number of years for those *currently* in a residency is combined with the mean number of years still planned, and compared to the mean number of years for those who have completed a residency, a distinct pattern evolves. The number of years current residents are spending in a residency is greater than for those who have already completed one.

Table 4 is concerned with the specialty choice of residents. As might be anticipated, internal medicine, surgery (with its subspecialties), pediatrics and obstetrics-gynecology are the specialties most often selected in a residency. Few go into physical

which residents train. By a decided majority most residents select residencies that take place in medical school affiliated hospitals. Only 82 of the 508 who completed, or are currently in a residency, selected a non-medical school affiliated hospital.

Table 6 lists the number of graduates who are board-certified by specialty. If the figures in this table are compared with those in Table 4, they reveal that 56 per cent of those who completed a residency became board-certified. The reasons for this, no doubt, are numerous.

Tables 7 and 8 are devoted to those graduates who are members of a faculty of a medical school. Between the 1951 and 1955 classes the number has been fairly constant. Understandably, it has decreased since 1955, for those years represent the most recent graduates. Table 8 seems to indicate that more of the most recent graduates go into research. This has been consistent with the national average as seen in Figure 1.

Table 9 gives the number of graduates who are members of professional societies and the number of societies to which they belong. This table demonstrates that the longer a graduate is out of medical school

the more likely he is to join some professional society. As a corollary to this, the longer he is out of medical school the more societies he joins.

Table 10 deals with publications. As might be anticipated, 1959 and 1960 have the least number of graduates with publications to their credit.

TABLE 4
M. C. V. GRADUATES 1951-60
Number of Graduates Who Completed or Are Currently in a Residency by Type of Specialty

SPECIALTY	YEAR OF GRADUATION																				Total		
	1951		1952		1953		1954		1955		1956		1957		1958		1959		1960			Total	
	Co*	Cu	Co	Cu	Co	Cu	Co	Cu	Co	Cu	Co	Cu	Co	Cu	Co	Cu	Co	Cu	Co	Cu		Co	Cu
Anesthesiology.....	2		2		2		2		1		2	1	1	1				2		1	12	5	17
Dermatology.....	1	1					3	1			2					1		1			6	4	10
General Practice.....			4		2		7		1		2		1		3	1	1		1		20	3	23
Internal Medicine.....	13		9	2	11	1	11	2	11	1	5	4	11	4		13		7		11	71	45	116
Neurological Surgery.....										1									1			2	2
Neurology.....					2			1	1				1	1					1		4	3	7
Obstetrics-Gynecology.....	10	1	7	1	2		9		6	1	4	4	5	4		4	3				43	18	61
Ophthalmology.....	1		1		2	2			3	1	2	2	3	2		2	2		1	12	12	24	
Orthopedic Surgery.....	3		1		1				3	1	2	1				2		4		4	10	12	22
Otolaryngology.....			1	1					1		1		1			2					2	4	6
Pathology.....	1		1		2		1	1	3		2	1	1	2			3		2	11	12	23	
Pediatrics.....	6		4	1	4		6		6		4	3	7	3	4		8		2	41	17	58	
Physical Medicine.....																	1				1		1
Psychiatry.....	3		1	1	5	1	3	2	1	1		1		3		3				13	13	26	
Public Health.....	1								1								1				2		2
Radiology.....	2	1	1		1		1	1	2	1	3	3		3	1	2	3		2	11	16	27	
Surgery.....	4		3		5	1	3		8	3	2	2			6		8		16	25	46	71	
Urology.....	1		2		1		3							2			1			7	3	10	
Aviation Medicine.....			1	1																1	1		2
Sub-Total.....	48	3	38	7	40	5	49	8	48	10	30	23	30	31	8	43	0	45	0	42	291	217	508
Total.....	51		45		45		57		58		53		61		51		45		42		508		

*Co—denotes completed residencies.
Cu—denotes current residencies.

TABLE 5
M. C. V. GRADUATES 1951-60
Number of Graduates Who Selected Residency Training by Type of Hospital

Year of Graduation	MEDICAL SCHOOL AFFILIATED		NON-AFFILIATED		BOTH AFFILIATED AND NON-AFFILIATED		MILITARY		OTHER		TOTAL	
	Completed	Current	Completed	Current	Completed	Current	Completed	Current	Completed	Current	Completed	Current
1951	32	2	8	1	6		2				48	3
52	24	4	11		1		2				38	7
53	26	4	8		3		1	2			40	5
54	32	5	11	1	4	1	2	1	2		49	8
55	39	7	4	2	3		1		1		48	10
56	21	15	4	3	1	2	4	3			30	23
57	20	24	5	4	4	1	1	2			30	31
58	5	31	1	7	1	2	1	3			8	43
59		33		5		4		3				45
60		34		7		1						42
Sub-Total	199	159	52	30	23	11	14	15	3	2	291	217
Total	358		82		34		29		5		508	

Table 11 provides data on the externship. It vividly points out that the number who have held an externship has steadily increased. (The total number of students in each class has remained steady at approxi-

A few comments and questions about these data seem appropriate.

While it is easy to claim that there are either too many or too few specialists or general practitioners, it is not as easy to re-

TABLE 6
M. C. V. GRADUATES 1951-60
Number of Graduates Who Are Board Certified by Specialty

SPECIALTY	YEAR OF GRADUATION										Total
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	
Anesthesiology.....			1	2							3
Dermatology.....	1			2		2	1				6
General Practice.....											
Internal Medicine.....	4	3	4	8	6	1	8				34
Neurological Surgery.....											
Neurology.....			1		1		1				3
Obstetrics-Gynecology.....	7	5	1	2	3	1	3				22
Ophthalmology.....	1		2		1	1	1				6
Orthopedic Surgery.....	1	1			1						3
Otholaryngology.....		1									1
Pathology.....	1	1	2		3	2	1				10
Pediatrics.....	5	4	4	5	4	2	3	1			28
Physical Medicine.....											
Psychiatry.....	2	1	4	1							8
Public Health.....					1						1
Radiology.....	2				2	2					6
Surgery.....	3	3	3		6	1					16
Urology.....	1	1		1							3
Board Qualified.....	4	1	2	7	6	7	2	1			30
TOTAL.....	32	21	24	28	34	19	20	2			180

TABLE 7
M. C. V. GRADUATES 1951-60
Number of Graduates Holding Part- and Full-Time Faculty Appointments

Year of Graduation	TYPE OF APPOINTMENT		Total
	Part-Time	Full-Time	
1951	7	4	11
52	9	1	10
53	11	3	14
54	7	3	10
55	7	6	13
56	4	2	6
57	7	1	8
58	2	2	4
59	2	1	3
60			
TOTAL	56	23	79

TABLE 8
M. C. V. GRADUATES 1951-60
Number of Graduates Involved in Teaching, Research or Both

Year of Graduation	FACULTY RESPONSIBILITY			Total
	Teaching	Research	Both	
1951	8		3	11
52	7		3	10
53	13		1	14
54	6	1	3	10
55	7	2	4	13
56	4	1	1	6
57	4	1	3	8
58	1	3		4
59	2		1	3
60				
TOTAL	52	8	19	79

mately 95, plus or minus 5.) Undoubtedly many of the 1951 graduates were on the World War II G.I. Bill of Rights and perhaps had little need for the additional financial support offered by an externship.

solve this dilemma. The data in the study clearly demonstrate the difference in career choices of the M.C.V. graduates as compared to national trends.

The increase in the amount of time resi-

dents spend in their training is cause for some concern. For graduate medical education this poses some major questions: What is a reasonable duration of a residency? At what state in his education does a resident get to a point of diminishing returns? Is there only so much knowledge that he can

TABLE 9
M. C. V. GRADUATES 1951-60
Number of Graduates Belonging to Professional Societies
Total and Mean Number of Societies to
Which Each Class Belongs

Year of Graduation	Number of Each Class That Belong to Professional Societies	Total Number of Professional Societies to Which Each Class Belongs	Mean Number of Societies
1951	73	328	4.5
52	80	314	4.0
53	56	237	4.2
54	66	230	3.5
55	63	208	3.3
56	60	190	3.2
57	42	105	2.5
58	32	85	2.7
59	33	79	2.4
60	24	47	2.0

TABLE 10
M. C. V. GRADUATES 1951-60
Per Cent of Graduates Who Have Published
Since Graduating From M. C. V.

Year of Graduation	Per Cent of Class Who Have Published
1951	34%
52	21%
53	21%
54	26%
55	39%
56	25%
57	26%
58	20%
59	10%
60	7%
MEAN	23%

acquire about his specialty in this form of formalized education? These questions are already receiving national attention.

The decision by interns to select their residency in a medical school affiliated hospital, as indicated in Table 5, raises additional problems. Yet, the data in this study are not different from what often is reported in the Journal of the American

Medical Association when it lists residency choices by hospitals.

The data dealing with publications poses still further questions. The figures in Table 10 show that the two classes which have the largest number of publications to their credit are 1951 and 1955, the two years

TABLE 11
M. C. V. GRADUATES 1951-60
Number of Graduates Who Held an Externship and
Their Opinion About the Externship

Year of Graduation	Number Who Held Externship	OPINION ABOUT EXTERNSHIP		
		Much Value	Some Value	Little Value
1951	46	31	14	1
52	64	36	24	4
53	63	45	17	1
54	61	39	20	2
55	63	49	12	2
56	62	39	21	2
57	62	36	20	6
58	69	31	31	7
59	66	42	22	2
60	78	48	25	5
TOTAL	634	396	206	32

TABLE 12
M. C. V. GRADUATES 1951-60
Number of Graduates Who Were Involved in Research
While in Medical School and Their Opinion
About the Research Experience

Year of Graduation	Number Involved in Research	OPINION ABOUT RESEARCH		
		Much Value	Some Value	Little Value
1951	9	1	4	4
52	10	2	8	0
53	15	1	8	6
54	14	6	4	4
55	12	3	6	3
56	23	6	10	7
57	18	4	11	3
58	28	10	17	1
59	22	8	11	3
60	24	10	12	2
TOTAL	175	51	91	33

that have the larger percentage of specialists. While it is not included in any of the tables, this apparent consistency was investigated in the returned questionnaires. The investigation revealed that as a rule those in a specialty had a greater percentage of publi-

cations than those in general practice. Whether this is due to more journals being devoted to the specialists than to general practice, or whether this is a factor of the amount of training, or whether this is due to time available to write journal articles can be discussed indefinitely.

The relative value of an externship has long been the topic of discussion in undergraduate medical education. In this study a large portion of those holding an externship thought it of considerable value to their medical education. The fact that those are considered valuable educational experiences by graduates and are not a part of the

formal educational program of the medical school, should prompt medical school faculty to a searching analysis of the clinical experience offered in a medical school setting.

No doubt other questions and issues, on the basis of these data, can be raised. Any additional inferences or questions will have to be raised by the reader. All the alumni are invited to submit any comments, questions, criticisms, and/or suggestions that they feel appropriate. They would be most welcome.

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Laws Covering Insanity Need Revisions

Some of the laws covering insanity pleas in criminal cases are "so archaic that they are dangerous." "A substantial change in the word and spirit of the law on criminal responsibility is overdue," Drs. Franklin G. Ebaugh and John M. Macdonald wrote in the April 13th Journal of the American Medical Association. "The problem is crucial and the changes must be sweeping and immediate."

There is growing public dissatisfaction with the administration of laws governing criminal responsibility when a plea of insanity is entered. The public is critical of psychiatric disagreement on the witness stand and of juries for acquitting defendants who are not psychotic on grounds of insanity. Public ire is justified, but it should be directed not at the psychiatrist or the jurist but at the laws themselves.

The tests of criminal responsibility in most states are derived from the English M'Naghten Rules. Under the Rules, the accused is sane unless he is laboring under such a defect of reason from disease of the mind that he did not know the nature and quality of the act he was doing or did not know that it was wrong. "Only the idiot, the grossly demented senile, or the severely delirious patient can be said to have no

knowledge of right or wrong, and these persons seldom appear in the criminal courts."

Liberalization of the rules may inadvertently subvert the basic principles of humanitarian penal reform. Large numbers of offenders can, under the laws, be labeled insane and confined indefinitely in institutions called mental hospitals, which are really prisons in disguise with only a pretense of treatment and disregard of civil liberties and due process.

As a solution to the dilemma, the two psychiatrists recommended that the M'Naghten Rules be abolished and replaced with the concept of "diminished responsibility" along the lines of The Homicide Act introduced into English Law in 1957. Under this concept, the accused could be required to enter a plea of diminished responsibility in conjunction with a plea of insanity. The diminished responsibility plea to a murder charge would lead to a verdict of "guilty of manslaughter" and the sentence would be left to the judge's discretion. This would allow the judge to sentence the defendant to prison for a fixed term or for life, or place him on probation and make psychiatric or other medical treatment a condition of probation.

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Smallpox 1963

Smallpox scares are occurring with increasing frequency. Until this potentially epidemic disease is eradicated on a global basis, local defense must be maintained.

Smallpox disappeared from the United States sometime in the 1940's. The last confirmed case occurring in Virginia was reported in 1944.

In many countries in Asia, Africa and South America, the disease is still a serious problem. In fact, the 59 involved countries reported a greater number of cases in 1961, i.e., 78,430, than in 1960, i.e., 58,230. More than half of these cases were reported from India. We are faced with a constant threat of the introduction of this disfiguring disease, which has a mortality rate of over 30%. Seventy-two cases were imported into Europe during 1960-61. In the Americas, Brazil, reporting 1,411 cases in 1961 and Ecuador, reporting 491, still harbor endemic foci of smallpox. Frequency and speed of international travel are increasing the risk to the citizens of our country.

A high immunization level at home is necessary to back up the front line defense which requires vaccination of international travelers prior to entering this country and surveillance at ports of entry. Weak points exist in both lines of defense.

Weather conditions may require the landing of international flights at local airports where surveillance is not carried out. Travelers by air, infected a few days prior to their departure, may not develop symptoms until after their arrival at their destination thus increasing the risk to unsuspecting contacts.

Important to Virginia's second line of defense is health legislation which has provided over the years a systematic and continuous program of vaccination against

smallpox. Section 22-249 of the Code of Virginia provides that ". . . Every teacher and every pupil shall, within ten days after entering a public school, furnish a certificate from a reputable physician certifying that such teacher or pupil has been successfully vaccinated, or is entitled to exemption by reason of peculiar condition." The decline and eradication of smallpox followed the adoption and implementation of this 1919 statute. Smallpox cases in Virginia numbered 3,559 in 1920; 1,941 in 1921; 513 in 1922. The over-all trend continued downward with 1939 marking the first year without a reported case. This school regulation, a forerunner to the current practice of vaccinating during the first year of infancy, has encouraged the practice of revaccination just prior to entering school. Therefore, many Virginia school children experience a second vaccination which offers greater protection.

Essential to the second line of defense is the maintenance of current immunity among high-risk groups such as police transport workers and hospital personnel. Attendants and laundry workers are included in the latter group as well as physicians, nurses and laboratory employees. Pre-employment vaccination with revaccination every three years will maintain group immunity.

Placental immunity does not appear to last much over one month. Initial or primary vaccination can be safely and effectively done in the new-born period. It should be performed within the first year of life, usually between the third and sixth month. Systemic reactions are usually less at this age and vaccinia encephalitis is practically unknown. If necessary, smallpox vaccination may be done simultaneously with other

injections. The outer surface of the upper arm at the insertion of the left deltoid muscle is the preferred location for the primary vaccination. It is well to avoid more risky areas. When an active skin eruption exists such as eczema or pyoderma, vaccination should not be administered, and those recently vaccinated should avoid contact with others having these conditions.

Adequate treatment with vaccinia immune globulin (V.I.G.)¹ arrests the progress of "eczema vaccination" resulting from such exposure. V.I.G. is highly effective in other rare complications resulting from vaccination such as accidental inoculation into the eye, generalized vaccinia and vaccinia nicrosum. V.I.G. is used to prevent or modify smallpox in individuals who have had close contact with a case of smallpox.

The immunizing factor in variola or vaccinia virus has not been identified and thus serological evaluation of immunity is lacking. The response on revaccination, though useful as a guide, may be misleading. Revaccinating at a location other than the primary site avoids the affects of local skin immunity which can occur without systemic immunity. Although the duration of immunity continues to be a debatable subject, revaccination every five years and prior to the risk of exposure will serve routine purposes under usual local conditions.

Quarantine authorities at United States ports of entry are becoming more stringent in calling for arriving persons, including United States citizens, to have a valid International Certificate of Vaccination or Re-

¹ Any Virginia physician who believes that V. I. G. might be required for a patient should telephone one of the following Red Cross volunteer consultants for V. I. G. distribution: James H. Pert, M.D., Washington 6, D. C., Office: Republic 7-8300, Ext. 543, Residence: Chevy Chase, Maryland, Oliver 6-8375 or R. H. Parratt, M.D., Washington 9, D. C., Office: Dupont 6-4220, Ext. 280, Residence: Bethesda, Maryland, Oliver 2-0548.

vaccination against Smallpox. To be valid the certificate must be completed in detail, including:

- NAME OF THE PERSONS VACCINATED OR REVACCINATED
 - HIS SIGNATURE (If child, written in by parent or guardian)
 - SEX
 - DATE OF BIRTH
 - DATE OF THE VACCINATION OR REVACCINATION
 - RECORD OF EITHER:
 - PRIMARY VACCINATION, READ AS SUCCESSFUL, OR REVACCINATION
 - WRITTEN SIGNATURE OF THE VACCINATING PHYSICIAN
- (Required even though the vaccination may be carried out by a nurse or medical technician)

THE "APPROVED STAMP" from the local or State health department for authentication.

It is unlikely that smallpox will break through our first and second line of defense but a high level of immunity among the general population through systematic and periodic vaccination will strengthen our defense.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE DISEASE CONTROL

	May 1963	May 1962	Jan.- May 1963	Jan.- May 1962
Brucellosis -----	0	0	0	4
Diphtheria -----	0	0	1	4
Hepatitis -----	81	120	488	709
Measles -----	2155	1377	6325	7614
Meningococcal Infections ----	3	6	52	32
Aseptic Meningitis -----	1	1	11	7
Poliomyelitis -----	1	0	1	2
Rabies (In Animals) -----	16	16	105	72
Rocky Mt. Spotted Fever ---	3	0	4	3
Streptococcal Infections ----	1010	679	5458	4311
Tularemia -----	0	1	5	6
Typhoid Fever -----	1	2	4	6

BENEDICT NAGLER, M.D.

Demonstration Project in P.K.U.

The Demonstration Project in Phenylketonuria, undertaken by the Virginia Department of Mental Hygiene and Hospitals, has initiated its case finding program with the testing of all patients at Lynchburg Training School and Hospital for phenylketonuria. Phenylketonuria, (PKU) previously known as phenylpyruvic oligophrenia is the result of an inborn error of metabolism; the most striking clinical feature is severe mental retardation. This sign and the presence of phenylpyruvic acid in the urine constitute the syndrome of phenylketonuria. Children having this condition cannot properly metabolize phenylalanine, an essential amino acid. The fact is now well established that a special diet low in phenylalanine, started within the first few months of life, prevents or minimizes brain damage.

To date the best results in detecting infants with this condition have been obtained from a combination of methods—screening of all infants as well as screening of high risk groups such as mentally retarded persons in institutions and children in special classes. Screening high risk groups has been stimulated by the fact that in the past most of the infants with PKU who were detected and treated early were discovered because there was a known retarded child with this condition in the family.

Approximately 3,000 patients at Lynchburg Training School and Hospital have been tested with the urine test for PKU. This constitutes almost the entire population with the exception of those patients on

extended furlough. For this initial screening, two urine tests for PKU were employed—one being the test tube test, and the other, the diaper test.

The test tube test is the oldest, best known, and most widely used. Five drops of 10% ferric chloride is dropped into one cc. of urine. The color reaction of ferric chloride with phenylpyruvic acid is an immediate gray-green color response which fades in a matter of minutes. Other color reactions noted in the testing were purple (70), dark brown (146), and extremely cloudy (223). According to reports on findings elsewhere, these color reactions are most likely due to ingested salicylates, thorazine and compazine.

Of the total number tested at Lynchburg Training School and Hospital, positive reactions were found in twenty cases. Four of the twenty appear to have been false positives, having obtained a negative reaction on a second testing. False positive reactions are due to the presence of hydroxyl-phenylpyruvic acid. This compound is a normal metabolite of phenylalanine. When this is in excess, it may give the same green color.

This is the reason why it is important to confirm the diagnosis of PKU with the blood test.

In addition, there are sixteen PKU patients in the institution—seven of whom were diagnosed prior to admission. Nine patients have been diagnosed by the institution since 1956, during which period all newly admitted patients have been screened for PKU.

All positive urine tests are being followed up by blood tests for phenylalanine for confirmation of the diagnosis. The LTSH laboratory is now prepared to do these blood tests using the enzymatic spectrophoto-

NAGLER, BENEDICT, M.D., *Superintendent of Lynchburg Training School and Hospital, Colony, Virginia.*

Approved for publication by Commissioner, Department Mental Hygiene and Hospitals.

metric method described by LaDu and Michael.

A second urine test screening is planned at a later date. PKU patients on rare occasions fail to excrete phenylpyruvic acid, therefore, it is believed that one cannot exclude the possibility of this disease on the basis of one negative urine test. This screening program is being extended to other institutions in the State.

As previously undiagnosed cases of PKU are disclosed, the family and family physician will be advised. With adequate follow-up they can be alerted to the importance of having all future infants including cousins, nephews, nieces tested.

This five-year project is being undertaken with technical and financial support from the Community Services Branch of the Na-

tional Institute of Mental Health and in cooperation with physicians, health, education, and welfare agencies. The project office with staff and laboratory facilities is located at the Lynchburg Training School and Hospital.

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Store Canned Foods in Cool Place

All canned foods should be stored in a cool place, according to Philip L. White, Sc.D., secretary of the Council of Foods and Nutrition of the American Medical Association.

Storage of canned foods at relatively high temperatures causes a slow deterioration of

certain vitamins, he said in the January Today's Health magazine, published by the AMA.

"The net loss of nutrients depends upon the food and the vitamin; some vitamins are more stable than others."

Complications of Blood Transfusion

Transfusion of blood and blood products is and will continue to be a lifesaving procedure. However, reactions occur and particular hazards exist in direct proportion to the number of transfusions given. These reactions and hazards are varied and sometimes difficult to recognize and treat; therefore the clinician and the laboratory worker should be familiar with them and be versed in their management.

It is estimated that reactions occur in 3% of transfusions and may take any of the following forms:

(1) By far the most common is the "Allergic Reaction" which usually is manifested by itching, hives or asthma. The differentiation from other similar reactions is not difficult and the treatment is purely symptomatic. The time that the reaction occurs during the transfusion may be an index to its severity i.e., early onset—more severe reaction. This complication may be largely prevented by choosing donors on no medication and in a fasting state.

(2) Another reaction is "Pyrogenic" in nature. It is manifested by a febrile response with or without a feeling of chilliness. The patient usually does not look or feel sick and has none of the usual criteria of a hemolytic reaction. The onset is towards the end of the transfusion, or even up to 24 hours later. The treatment is symptomatic. The etiology of this may be bacterial products (killed) in the infusion set or bottle although recently leukoagglutinins have been demonstrated in the sera of 65% of individuals with this reaction. This may be prevented by giving buffy-coat free blood to prevent leukoagglutinin-leukocyte febrile reactions.

(3) A rare type of reaction is that associated with "Contaminated" blood. This is caused by *Pseudomonas achromobacter* contamination. This organism grows at refriger-

ator temperature. When infused, the resulting reaction is similar to a hemolytic one and the differentiation may be made with certainty only by smear and culture of the donor blood. These reactions are almost uniformly fatal.

(4) The "Hemolytic Reaction" usually results from clerical error with the result of incorrect blood being infused into a patient. This is the prime reason for double-checking names, numbers, beds, etc. before a transfusion is given. A hemolytic reaction due to properly matched blood given to the right patient is rare, however, the mortality rate is over 50%. This is also a good reason for ordering blood only when needed. The hemolytic reaction results when red blood cells of the donor come in contact with antibodies of the recipient which are specific to blood factors present on the red blood cells. The red cells clump, hemolyze and release free hemoglobin into the plasma. Some of the hemoglobin is absorbed by plasma haptoglobin but the majority is excreted in the urine. Heme casts block the tubules, some hemoglobin is reabsorbed by the tubules and converted into bilirubin and hemosiderin. These events explain the hemoglobinemia, hemoglobinuria, bilirubinemia and hemosiderinuria present in hemolytic reactions. The reaction usually comes on after transfusion of 50 to 100 cc. of blood and is manifested by chills, fever, headache, malaise, angor animi, back pain, restlessness and sweating. The plasma will be pink and the urine blood tinged.

The diagnosis is usually easy and the treatment is to stop the blood immediately and to induce a prompt osmotic diuresis to flush out the heme casts and prevent renal tubular damage.

(5) Circulatory overload usually occurs in patients with intrinsic heart disease and may be prevented by slow infusion of blood or by giving packed red blood cells.

(6) Several diseases may be transmitted

by transfusion, the most frequent being infectious hepatitis. This disease may be active in a donor who has no clinical or laboratory evidence of hepatitis. Brucellosis, malaria and syphilis may be transmitted also.

(7) If stored blood is used, several labile coagulation factors are lost. These include Factor V and Factor VIII in addition to platelets. Also in blood two weeks old, the plasma potassium level may reach 20 MEQ/liter. In blood three weeks old, the blood ammonia may be 900 gamma%.

(8) Technical errors of venipuncture are rare. Air embolism, fat embolism, thrombophlebitis and abscess do not occur very often. The injection of 150 cc. of air has occurred without fatality.

(9) Citrate intoxication can occur usually with the metabolic effect of hypocalcemia and tetany. Sometimes a metabolic alkalosis occurs on the third day following several citrated transfusions.

(10) Transfusion hemosiderosis usually occurs after 100 to 150 transfusions.

(11) The possibility of recipient sensi-

zation to red blood cells factors must be constantly kept in mind to prevent the development of irregular antibodies. This can be done by keeping transfusions to a minimum and using plasma if possible.

(12) The problem associated with massive transfusions and open heart surgery usually involves thrombocytopenia with severe hemorrhage with or without fibrinolysins. The thrombocytopenia is thought to be on a dilution basis and the treatment must be rapid and energetic with platelet transfusions, fresh whole blood, steroids and if fibrinolysins play a role, fibrinogen and Epsilon Aminocaproic Acid (Lederle).

(13) Scattered case reports of hemolytic reactions without demonstrable antibodies are seen. These are extremely rare and are probably small gaps in technology which will be filled in the future. At present, direct cross-matching done in saline, albumin and Coombs serum is sufficient.

E. A. HANSBARGER, JR., M.D.
Resident in Pathology
Medical College of Virginia

What Is Drug Safety?

Safety is a relative thing; it can never be black or white. A drug which would be considered incredibly dangerous as a substitute for aspirin might well be useful in the treatment of a life-threatening disease. Furthermore, safety can only be judged in the light of current scientific information. As a consequence, a drug properly released as safe for use may later be made even safer by a technical advance. The World War II penicillin was made by production methods that today seem crude, but it saved countless lives.—John T. Connor, President, Merck & Co., to American Hospital Association, Sept. 18, 1962.

The Malabsorption Syndromes

SPRUE was initially described in 1888 by Samuel Gee and carbohydrate diets were noted to be our most effective therapy originally. For the bulk of our modern day knowledge in this disorder, however, we owe our thanks to the Dutch pediatricians for their outstanding work during and just after World War II, when they detected gluten to be the offender in non-tropical sprue or celiac disease states.

The impaired absorption of foods, minerals and water from the gastrointestinal tract has been given the general term of malabsorption syndrome, although this is a condition incorporating many disorders. Steatorrhea is only one feature of malabsorption even though many factors are related synonymously with malabsorption syndromes, and, in actuality, the absorption of all foodstuffs is usually affected.

Adlersberg has written extensively on this subject and has attempted a classification. Primary: no detectable clinical, x-ray, or postmortem evidence of gross disease of the gastrointestinal tract, pancreas or liver; Secondary: to diseases of the gastrointestinal tract, pancreas or liver.

Resections of the stomach or large portions of the small intestine are the most frequent causes of steatorrhea. Balance studies have shown that postgastrectomy cases, with malabsorption, will lose 200 to 300 calories per day in the stool and, of course, eventuate in a weight loss. Malabsorption caused by pancreatic disease, and those encompassed in the sprue syndrome, are also major causes of steatorrhea.

Pancreatic diseases may lead to inadequate splitting of fats, due to inadequate lipase, and hence steatorrhea. Also gastric resection may lead to incomplete admixture of bile salts and lipase with the food and thus to steatorrhea. Biliary tract obstruction would not allow adequate bile salts to pass into the gastrointestinal tract, nor would severe liver disease, and both conditions could result in steatorrhea. Malabsorptive defects of the small bowel may come from surgery, disease, congenital defects, and possible genetic defects.

The diagnosis of malabsorption is established by a bringing together of several different disciplines of study. Chief among them, as always, is a detailed history and physical examination. The touch, feel and smell of the stools remains one of our prime diagnostic areas. Sprue stools characteristically float, and are large, foamy, fatty and have a rancid odor. Characteristically they reveal increased fats and fatty acids when examined microscopically. Stool balance studies are difficult for most labora-

tories but when properly done are among our best tests for diagnosing malabsorption. Tagged fats (triolein and oleic acid with radioactive iodine) have been popular in most laboratories since they are easier to handle than the balance studies and several claim this method equal to the other modalities employed. X-rays of the gastrointestinal tract, with emphasis on the small intestine, may lead us to the diagnosis of malabsorptive disorders. The findings of segmentation and clumping of the barium meal, which we refer to as puddling, may be found in malabsorption, particularly in the late cases. Several satisfactory biopsy tubes are now available for study of the small bowel and frequently x-ray studies and biopsy specimens of the mesenteric small intestine are necessary before a complete classification can be obtained. When enterogenous steatorrhea is suspected, hematology studies are in order. Most patients with primary sprue will show some degree of macrocytic anemia. It should be emphasized that the blind loops and diverticuli of the small intestine may have malabsorption (of vitamin B-12 in particular) and develop an anemia similar to that seen in Addisonian pernicious anemia cases. A pancreatic profile is necessary when we are unable to detect a cause for the malabsorption in the small intestine. The Secretin test remains our best method for evaluating pancreatic function. Occasionally we try our patients on gluten free diets, insofar as possible, when suspicious of celiac disease (non-tropical sprue). Gluten consists of two polypeptides, glutelin and gliadin. Frazer has stated that gliadin is as effective as complete gluten. The effect disappears with acid hydrolysis, and apparently is unaltered by peptic or tryptic digestion.

The electron microscope has been of inestimable value in studies of biopsies of the small intestine. There is noted a loss of the absorbing surface in non-tropical sprue and while the gluten-free diet may cure the patient clinically, the biopsy may remain positive. The so-called brush border may be present normally, and may disappear while the patient is still ill. It is not known why gluten interferes with the brush border. It may act as an antimetabolite which does not allow regeneration of the brush border, or it actually may alter it. If the patient should be maintained on six months' cessation of gluten, there may be a return of the brush border to the small intestine. In tropical sprue cases the brush border may be present even at the height of the illness, and these cases will respond to administration of folic acid. Non-tropical sprue cases (adult celiac disease) do not respond to folic acid and the brush border is not present even after clinical cessation of signs and symptoms, but will later return. Non-tropical sprue, perhaps, makes up the greatest portion of the syndromes. Tropical sprue may have the lesion located in the cell cytoplasm.

Non-tropical sprue may be screened by a host of laboratory procedures, including the serum carotene level. In these cases it may be low (10-40 milligrams percent). The fecal fat may be increased to 15-30 grams per 24 hours in non-tropical sprue, and the D-Xylose (5 hours) may be up to 2 grams in non-tropical sprue. Serum calcium is low (8 milligrams percent), as is serum albumin (3 grams percent) in non-tropical sprue. It should be emphasized that a gluten free diet may give clinical improvement without pathological improvement. Peroral small bowel biopsy in celiac disease may reveal villous atrophy with no difference between the crypts and villi, but after gluten exclusion it may resume the normal columnar form. A serum glutamine load may remain elevated in non-tropical sprue cases compared to normal controls. The so-called brush border is the absorbing surface and is abnormal until the gluten free diet is instituted, and then it is thought to be normal again. Non-tropical sprue may be an hereditary disease, but if so it is probably recessive. The clinical picture is confused frequently in non-tropical sprue, and the peroral small bowel biopsy frequently is needed to clinch the diagnosis. Clinical response usually may be obtained in a month on the gluten exclusion diet. Steroids may bring these cases under control, but the steatorrhea will continue until gluten exclusion is started in the non-tropical sprue case. It may be quite difficult to maintain a truly gluten free diet and it is often necessary to call in professional dietitians to review the diet in this regard. Apparently, non-tropical sprue patients lack adequate protein splitting enzymes for gliadin, and only that of wheat or rye has a truly pathogenic effect so far as the altered intestinal function is concerned. Although some degree of cure may be seen in very early cases, it should be emphasized that such a remission may not constitute a cure but is certainly the first step in the treatment of this disorder.

ROBERT EDGAR MITCHELL, JR., M.D.

Deficit Spending by State Medical Societies

THE January 2 issue of *News and Views* and an editorial in the Virginia Medical Monthly in February gave a number of reasons that had made it necessary for the Council and House of Delegates of The Medical Society of Virginia to raise the annual membership dues from \$25, which had been established in 1946, to the current level of \$40. If this increase had not been authorized it would have been impossible to balance our 1963 budget.

A considerable factor in this decision was the sharp retrenchment in

the advertising program of the pharmaceutical houses which followed the Kefauver Committee's investigation of the drug industry. This reduction in advertising is thoroughly understandable but it has forced the Virginia Medical Monthly and the vast majority of other state journals to operate in the red for the past two or three years. It was pointed out that our Virginia members at least had the consolation of knowing that our new schedule of dues fell far below the national average and only one state society charged less than The Medical Society of Virginia.

A recent newsletter from Dr. W. Benson Harer, President of the Pennsylvania Medical Society, to the membership of that organization highlights the financial difficulties that state societies in general and the Pennsylvania Society in particular are experiencing. President Harer pointed out that despite annual dues of \$60 their Society operated at a deficit during 1962. In an effort to lessen the deficit this year the Finance Committee of the Board of Trustees made a 20 percent reduction in 27 items requested in the 1963 budget and recommended a \$10 dues increase. This would have raised the annual dues to \$70 but a deficit of \$73,000 for the current year would have resulted despite this increase.

The Board of Trustees approved the budget and the dues increase but the House of Delegates rejected the \$10 increase and a deficit of \$183,000 for the current year is anticipated. Several alternatives will be considered when the House of Delegates of the Pennsylvania Medical Society meets this Fall but the outlook at the moment is not promising.

And we think we have troubles!

HARRY J. WARTHEN, M.D.

New Members.

Since the list published in the June issue, the following new members have been received into The Medical Society of Virginia;

Robert Wallace Baxter, M.D., Richmond
Joseph Thomas Bones, M.D., Richmond
Thomas Rives Butterworth, Jr., M.D.,
Richmond

Roger Detlef Cornell, M.D., Arlington
William Carlyle Gill, Jr., M.D., Richmond

John Tallman Jarrett, M.D., Richmond
Charles Leon Jennings, M.D., Roanoke
Juan Rene Keuter, M.D., Roanoke
James Wyatt Phillips, M.D., Norfolk
David Kerndt Wiecking, M.D., Charlottesville

Dr. Charles M. Caravati,

Richmond, was guest speaker at the annual meeting of the Medical Association of the State of Alabama in Mobile, April 25 and 26. He spoke before the section on internal medicine, his subject being Hepatic Structure and Function in Health and Disease, and before the general session on The Management of Gastric Ulcer. He also participated in a panel on Newer Developments in Internal Medicine.

Steroid Drug Bank Program for Kidney Disease Patients.

What about your kidney disease patients for whom steroids are indicated? Does the cost present a problem for some of them?

Virginia residents can now obtain, on a prescription basis, at less-than-wholesale cost, certain steroid drugs. This drug program is possible because of a grant from the Richmond Soroptomist Club combined with resources of the Virginia Chapter of the National Kidney Foundation. Standard Drug Company, Virginia Chapter's co-operating pharmaceutical agent, handles dis-

persing and shipping of prescribed drugs.

Telephone Richmond 358-9814 or write the Virginia Chapter, National Kidney Disease Foundation, 2501 Monument Avenue, Richmond 20, Virginia, for a drug list and application forms.

Dr. Luther C. Brawner,

Richmond ophthalmologist, spent the month of June at the Beni Messous Hospital in Algiers under an emergency program organized by Medico, a service of CARE. He joined seven other physicians on the mission which is co-sponsored by the State Department.

Dr. Ralph Ownby, Jr.,

Richmond, has discontinued the private practice of pediatrics in order to help develop a program at the Medical College of Virginia that will seek early diagnosis of growth and development abnormalities, including mental retardation. He has been appointed the first full-time director of the consultation and evaluation clinic and has also been named a full-time professor of pediatrics.

Study of Myelogenous Leukemia.

The cooperation of physicians is requested in a study of chronic myelogenous leukemia being conducted by the Chemotherapy Service of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

Referrals of patients are needed, particularly those in the 20 to 40 year age group with high white blood cell counts and platelet counts, for studies of newer chemotherapeutic agents and as a source of white cells and platelets for *in vitro* and *in vivo* study.

Physicians who wish to have their patients considered for the study may write or telephone Dr. Paul P. Carbone, Chemotherapy Service, Medicine Branch, National Cancer

Institute, Bethesda 14, Maryland. Telephone: 496-4251.

Promotions.

Dr. Ennion S. Williams, Richmond, has been promoted to vice president-promotion of The Life Insurance Company of Virginia. In his new position, he will have the overall supervision of the Medical, New Business, Claim and Health Departments.

Dr. Howard M. McCue, Jr., associate medical director, was advanced to the position of medical director to succeed Dr. Williams.

Virginia Academy of General Practice.

Dr. Frank D. Daniel, Charlottesville, was installed as president of the Academy at its annual meeting held in Richmond in May. Dr. Thomas L. Lucas, Alexandria, was named president-elect, and Dr. Samuel F. Driver, Roanoke, vice-president.

Virginia Surgical Society.

Dr. Charles E. Davis, Jr., Norfolk, has been elected president of this Society. Dr. Carrington Williams, Jr., Richmond, has been re-elected secretary.

Dr. Murray R. Blair, Jr.,

Has been promoted to associate dean of the medical school of the Medical College of Virginia. He has been serving as assistant dean since the late summer of 1961.

Richmond Area Heart Association.

Dr. William H. Higgins, Jr., has been elected president of this Association, and Dr. Owen Gwathmey vice-president.

Dr. John B. Redford

Has been named professor and chairman of the department of physical medicine and rehabilitation at the Medical College of Virginia, succeeding Dr. Fredrick E. Vultee, Jr., deceased. He comes to the College from the University of Washington Medical

School in Seattle where he was assistant professor of physical medicine and rehabilitation. Dr. Redford assumed his duties on the 1st of July.

American Cancer Society.

The 1963 scientific session of this Society will be held at the Biltmore Hotel, New York City, October 21-22. There will be a conference on Unusual Forms and Aspects of Cancer in Man.

Symposium on Cardiac Disease.

The West Virginia Centennial Symposium on Cardiac Disease will be held October 17-19 at the West Virginia University School of Medicine. For further information, write Dr. Russell V. Lucas, Jr., West Virginia University Medical Center, Morgantown, West Virginia.

Medical Seminar Cruise.

The Duke University School of Medicine is sponsoring its ninth postgraduate medical seminar cruise this fall. The cruise will take doctors to the Mediterranean, visiting Lisbon, Tangier, Palma de Marjorca and Naples. The ship *Italia* will sail from Port Everglades on September 11th and from New York City on the 14th and will terminate in Naples on the 28th.

Shipboard lectures and informal panel discussions will be given on various subjects in medicine by five members of the Duke Medical School Faculty. While designed primarily for the generalist, the program should be of value and interest to the specialist.

Information concerning the cruise may be obtained from the Allen Travel Service, 565 Fifth Avenue, New York 17, New York.

Now Leasing

At McLean, Virginia. Few suites still available in new multi-story elevator building in fast-growing suburb of Washington, D. C. To be ready for occupancy August 1963. Write P. O. Box 502, McLean, Virginia, or phone KEnmore 8-5010. (*Adv.*)

Office Space

To buy or rent in the new Annandale Doctor's Building, Annandale, Virginia—Northern Virginia's fastest growing area. Certain specialists as pediatrician, radiologist, ENT, orthopedic surgeon, neurologist, neurosurgeon, psychiatrist, allergist, and dermatologist are especially desired. For further information call Dr. Wagman at JE 4-4449 or SO 8-7991. (*Adv.*)

Practice and Office for Sale.

Because of physical disability, I have given up my practice in Colonial Beach, Virginia, and am interested in selling my practice and a fully equipped office building. Colonial Beach is primarily a summer resort with a year-round population of about

2,700 and a summer population of 15,000 to 20,000. The office consists of 8 rooms, with a laboratory and utility and furnace room. It is air-conditioned throughout. It is fully equipped and includes a 15 MA x-ray machine. Attached to the office is a 3 room apartment, fully furnished. For further information, contact Dr. William H. Matthews, Box 134, St. Paul, Virginia, or call Rockwell 2-6001. (*Adv.*)

Office Space Available.

Sufficient space for medical office, examining room, reception room, air conditioned. In the Professional Building, Richmond. Available July 1st. Call any morning between 9:00 and 12 Noon. Richmond MI 3-7027. (*Adv.*)

Obituaries

Dr. Samuel Clarence Couch,

Pioneer Russell County physician, died May 13th at the age of eighty-four. He graduated from the University of Louisville, Kentucky, in 1908 and had practiced in Russell County since that time, except for two years in Tazewell County. Dr. Couch was active in his church, having taught an adult class for fifty years. He was also active in county political and civic affairs. Dr. Couch had been a member of The Medical Society of Virginia for fifty years.

His wife and a sister survive him.

Dr. Mark Roy Faville,

Roanoke, died March 17th. He was a native of New York State and ninety-two years of age. Dr. Faville received his medical degree from the University of Virginia in 1910. He specialized in eye, ear, nose and throat work and practiced in New York and South Carolina before moving to Roanoke in 1914. He had been a member of The Medical Society of Virginia since 1916.

Dr. Robert Bruce Mallett,

Arlington, died May 27th. He was fifty-two years of age and a graduate of the George Washington University Medical School in 1938. Dr. Mallett practiced briefly in Orange. This practice was interrupted by World War II during which he served in the Army Medical Corps. After the war, Dr. Mallett established his practice in Fairlington. He had been a member of The Medical Society of Virginia for twenty-three years.

He is survived by his wife and a son.

Dr. George Bentley Byrd,

Norfolk, died April 29th, at the age of seventy-one. He received his medical degree from the Medical College of Virginia in 1914 and following his internship began his practice in Norfolk. Dr. Byrd served in the Navy during World Wars I and II and retired in 1952 with the rank of Captain. During this interim he also served on the faculty of the University of Virginia Medi-

cal School. He was a member of The Medical Society of Virginia.

His wife, a son and a daughter survive him.

Dr. Robert Sydney Cunningham,

Richmond, died May 24th. He was seventy-one years of age and a graduate of Johns Hopkins University Medical School in 1915. Dr. Cunningham was a former dean of Albany Medical School, New York; professor of anatomy at Vanderbilt University Medical School and at Albany Medical School; administrator of Albany Hospital and executive director of Albany Medical Center. He retired in 1952. At the time of his death, Dr. Cunningham was a visiting professor of anatomy at the Medical College of Virginia. He had been a member of The Medical Society of Virginia since 1957.

His wife and a foster daughter survive him.

Dr. Sidney Stevens Negus,

Chairman emeritus of the department of biochemistry at the Medical College of Virginia, died May 17th. He was visiting friends in Port Washington, New York, when he suffered a stroke. Dr. Negus retired from the Medical College of Virginia last June, concluding fifty years of teaching. He had taught nearly 10,000 students.

Dr. Edmunds.

God in His infinite wisdom having called to Himself Dr. Meade Castleton Edmunds, our colleague and friend who was a member of this organization for over 40 years, the Petersburg Medical Faculty, now assembled, RESOLVES as follows:

That in the death of Dr. Meade Edmunds we have lost a valued member, one whose high standard of medical practice and outstanding ability made him a credit to our profession and an inspiration to all of his friends both those who had known him many years and those who knew him for only a limited time.

Concerning his professional ability there was no question. For forty years he practiced medicine in his chosen field of otolaryngology, blending the best of the old with the finest of the new for though a conservative in his thinking he exemplified so well the old adage, "Be not the first by which the new is tried, nor yet the last to lay the old aside."

Dr. Edmunds was a man of winsome personality, who could always be trusted to give a fair, impartial opinion without rancor or jealousy, and who enjoyed the companionship and confidence of his fellow doctors. The Faculty will miss him, as will the community at large, for he had many friends and associates who recognized his ability and unselfishness and enlisted his services in civic and community organizations.

BE IT FURTHER RESOLVED that our deepest sympathy is extended to his family and relatives and that a copy of this resolution be spread on the minutes of the Petersburg Medical Faculty and sent to The Medical Society of Virginia.

WM. B. MCLWAIN, III, M.D., *Chairman*
GLENN W. PHIPPS, M.D.
JAMES H. POWELL, M.D.
Committee

Guest Editorial

Adoption, 1963

ADoption is familiar but it is also changing. Now there are more babies available for adoption in comparison with the number of families wanting them. Babies are placed at a younger age. Prospective mothers need to make arrangements earlier for maternity care and for adoption. Adopting families wait a comparatively short time to receive a baby. Recently there have been more referrals by physicians of couples desiring adoption as well as mothers wishing to place a baby. In view of these changes current information from one agency, the Children's Home Society of Virginia, may be useful. There is some variation among authorized agencies but the experience of the oldest and largest adoption agency in the State may exemplify trends.

The number of mothers requesting care for their babies has grown 60% since 1957 and is still increasing. There are not enough resources to receive all babies and therefore a mother is wise to make contact with an agency early in pregnancy so a definite plan can be made. It is easier to cancel later, if necessary, than to be without a resource at the last minute. Because of this increase in the number of mothers needing agency service, some of the following "last minute" problems couldn't be helped:

"I asked my doctor four months ago about arranging for adoption but he said there was no hurry, to wait until the baby came."

"The doctor in the country said I could just leave the baby at the hospital." (She couldn't.)

"The doctor said he had a fine family for my baby. But the day after it was born he said it was all my responsibility." (Presumably he had only one family in mind and the child was the wrong sex, or they changed their minds.)

At least 99% of the mothers are unmarried. They range in age from 13 to 48, and are from varied cultural backgrounds. There appears to be some increase in the more privileged group. Each mother is expected to obtain for the Society certain medical information about herself and the child, to give as much as she can about medical and social heritage and to maintain responsible contact with the Society until legal release of the child is accomplished. If she has never been married, or had a final divorce decree before conception, the mother can accomplish legal release alone. If divorce was not final before conception it is unlikely that release can be legally valid without the husband's knowledge. The exceptions to this are rare.

It is not easy to give up one's baby forever. Some mothers do not see their babies but agency experience has shown that those who see and have a limited experience with the child recover better, although they may grieve more at the time of separating. The Society's worker stands by to understand and help during the period of grief. The Society approaches each mother with respect for her strength and capacities, whatever they are. It is hoped that as a result of this each one will have greater self respect and capacity for sound decisions in the future.

Each infant has a period of observation before an adoption home is chosen. When the child has good, fully known heritage and uncomplicated medical history it may be an extremely short time. Where there is serious medical threat, doubtful heritage or legal entanglement, it will be longer. In 1962 50% of the babies were less than three months old at placement. The adoptive family receives for their physician's use, a full report of the child's medical history and the pediatric care given him. Thanks to the progress of medical treatment it appears now that only a very few children (e.g. the Mongolian, the blind) are not adoptable.

Couples adopt young infants because they cannot have children biologically. Adoption can be very good, although normal pregnancy would be better. It is not the child who would have been better, but his way of coming into the family. Adoption is not wholeheartedly accepted until the couple has faced the denial of children-by-birth. Physicians well know the painfulness of this denial. In they wish to be kind they may encourage the patient to keep on hoping, unrealistically. What the adoption agency hears is "why didn't he tell us the truth so we could begin thinking about adopting?"

A successful adoption rarely occurs immediately after a couple hears that pregnancy is improbable, or immediately after the loss of a child. One does not suggest to a newly widowed woman that she immediately find another to take the husband's place; the experience of the involuntarily childless couple is parallel. Grief is normal, healing can follow but it takes some time.

The time families wait for a baby is much less now that more babies are available. In 1962, 73% of the families took their baby home within nine months of the day of application. Only 10% waited a year or more. Those who wait are usually those who need a special kind of child. Even a strong preference for one sex can be a factor if most children in care are of the opposite sex.

The agency is pleased to have doctors refer interested couples. What does an agency want in adopting parents? People who are physically and emotionally healthy; respectable, solvent, of an appropriate age and living within the State; possessed of some wisdom and courage to meet problems, able to trust and claim as their own a child born to someone else. Perfection is not expected. The agency tries to understand people as they are, not to measure them against a theoretical ideal.

The following list of Virginia agencies which receive and place children for adoption may be useful to the physician who wishes to make a referral:

Children's Home Society: statewide, nonsectarian, non-governmental; white infants. Addresses: P. O. Box 554, Richmond, P. O. Box 1746, Roanoke, P. O. Box 366, Arlington.

Norfolk Child & Family Service: local, nonsectarian, interracial, 308 W. Freemason St., Norfolk 10.

Friends' Association for Children:—local, Negro children, 1001 St. Paul Street, Richmond.

Jewish Family Services: local, sectarian; 210-A S. Sheppard St., Richmond.

Catholic Family and Children's Services,
811 Floyd Avenue, Richmond,
4049 N. 21st St., Arlington,
318-34th St., Newport News,
601-608 McKeivitt Bldg., Norfolk,
451 Washington St., Portsmouth.

All these agencies are licensed to practice adoption by the Department of Welfare and Institutions. A few child-care institutions are licensed for a small adoption program in addition to their resident care.

Departments of Public Welfare throughout the State are legally authorized to practice adoption. Each department is governed by a local board and the size and quality of the program varies from locality to locality. Usually their services are available only if the mother has legal residence in the given community.

Resident Maternity Home Care is available to Virginia girls at the following Homes:

Brookfield, Inc., Broad St. Road, Richmond.

Seton House, 7700 Washington Highway, Richmond.

The Salvation Army Home and Hospital, 2705 5th Ave., Richmond.

The Florence Crittenton Home, 563 Oakley Ave., Lynchburg.

The Florence Crittenton Home, 678 W. 52nd St., Norfolk.

The Florence Crittenton Home, 4759 Reservoir Road, Washington, D. C.

The House of Mercy, Klinge and Rosemont Aves., N. W., Washington, D. C.

The above named Homes serve white mothers. Care is given to Negro mothers at St. Gerard's Maternity Home, 2511 Wise St., Richmond.

The costs and programs of the various Homes vary; information may be secured directly from the Home.

LOIS BENEDICT.

EDITOR'S NOTE: Miss Benedict is General Secretary of the Children's Home Society of Virginia, Richmond.

Asthmatic Bronchitis—Bronchial Asthma?

HOWARD G. RAPAPORT, M.D.
New York, New York

Asthmatic bronchitis, a diagnosis that should be discarded, is a manifestation of bronchial asthma and must be treated as such.

THERE IS CONSIDERABLE CONFUSION, and the possibility of considerable harm, among many members of the medical profession in regard to the relationship between bronchial asthma and asthmatic bronchitis. This is an attempt to resolve this confusion and, if possible, to clarify this relationship as it applies to pediatric allergy.

To introduce the problem, it will be worthwhile briefly to consider a common illness of childhood as it is presented to the practicing physician, and to follow it through its typical course of development. In most cases, it is first exposed to the physician during the late fall or winter as an acute situation, usually in the form of an urgent telephone request from an anxious mother. Her child, between the ages of one and four, has a cold and now, suddenly, is experiencing severe difficulty in breathing. Often this respiratory problem is accompanied by a choky, spasmodic cough which may aggravate the breathing difficulty.

On examination of the child, one may find, in addition to the respiratory difficulty and non-productive cough, sibilant and sonorous rales throughout both lung fields, low-grade fever, and hyperemia of the nasal

and pharyngeal tract. One is confronted with what appears to be a very sick child, laboring for breath. In almost all cases, the history will reveal a proneness to frequent colds.

If this is not the first such acute episode for the child, the picture may vary slightly—there may be no fever, the air-hunger may be more intense, the rales more audible, and considerable wheezing during expiration may be evident.

In either event—that is, whether the acute episode is the first or not—the clinical condition is usually diagnosed as “asthmatic bronchitis” or “bronchitis with wheezing”. Sympathomimetic amines, cough medicines, nose drops, fluids and steam usually relieve the symptoms. An effective antibiotic will help resolve the infection, or it may run its course uneventfully within two to five days. To all intents and purposes, the situation has been resolved to the satisfaction of all concerned.

In a few of these cases, one or two episodes are all that occur. In many others, however, the condition recurs, with a frequency varying from once every two or three weeks to once or twice a winter, for two or three years. In the recurrent situation, the physician searches for a focus of infection. Most often, the tonsils and adenoids are indicted—and removed. This may or may not have a beneficial effect on the original condition; usually it does not.

Other sources of chronic infection will be sought—in the chest, perhaps in an unresolved pneumonia, or in other members of the immediate family. If the situation persists, antibiotics may be prescribed prophylactically, or the child may be put to bed at the first sign of another respiratory illness and treated vigorously with oral medication. The condition is labeled “chronic

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bronchitis" or "recurrent bronchitis" and the child, to one degree or another, is incapacitated during a good part of his childhood. It is well known that a percentage of these children go on to develop obvious and recognizable bronchial asthma.

A number of respected authorities lend the weight of their experience in concurring with the diagnosis and treatment of this case. Indeed, insofar as the acute situation was resolved promptly and without complications, the treatment must be judged correct and proper.

The most recent edition of Holt's *Pediatrics* refers to "asthmatic bronchitis" as a condition in infants and young children in which the "asthmatic syndrome"—that is, dyspnea, wheezing, and obstruction of the finer bronchioles—is seen in conjunction with respiratory infections.

Blakiston's New Gould Medical Dictionary concurs, defining asthmatic bronchitis as an asthmatic type of breathing associated with respiratory infections.

It is my contention that there is no such thing as "asthmatic bronchitis", but that what we are describing here is nothing less than the early manifestations of bronchial asthma, allergic in nature, immunologic in etiology, the result of an antigen-antibody reaction in symptomatology, and frequently susceptible to control by the classic tools of the allergist.

In allergy, there are two types of hypersensitivity—immediate (anaphylactic) and delayed. We are all familiar with such examples of immediate hypersensitivity as the urticaria, angioedema and wheezing which may follow the ingestion of egg by an egg-sensitive child, or the prompt respiratory symptoms experienced by the hay-fever patient when exposed to a large dose of ragweed pollen. Although we are perhaps not equally at ease with the complex nature of delayed hypersensitivity, some of its manifestations, such as the familiar reactions to poison ivy or penicillin, are commonly encountered.

Raffel has offered five criteria for estab-

lishing the immunologic or allergic basis of delayed hypersensitivity:

1. An antigen, usually a foreign-body protein, sensitizes or primes the cells, thereby inducing the hypersensitive state.

2. An induction (or incubation) period of at least seven to 10 days passes, during which time antibody is produced.

3. A subsequent exposure to the same specific antigen elicits a local and/or systemic tissue reaction.

4. Cellular memory, i.e., further exposure to the same specific antigen after a prolonged interval, will cause a similar tissue reaction, even though the level of hypersensitivity decreases significantly during this time.

5. Hyposensitization, or the therapeutic induction of tolerance to offending antigens, can be effected.

As a matter of interest, there are also five factors which serve to differentiate the delayed type of hypersensitivity from the immediate type:

In the delayed type:

1. A relatively lengthy interval occurs between exposure to the shocking antigen and the appearance of clinical manifestations. This interval could be several hours or more, with the peak usually from 24 to 72 hours following exposure.

2. Circulating antibody is not demonstrable, as it is in the immediate type, by the transfer of the hypersensitive state to a normal recipient.

3. There are no specific shock tissues in the smooth muscle, blood vessels or collagen, as there are in immediate reactions.

4. Heredity is less important as a predisposing factor to delayed hypersensitivity.

5. One type of sensitivity can be abolished without affecting the other. For example, it is possible to complete successful hyposensitization of the immediate type of hypersensitivity while leaving the delayed type intact. Thus, the two types of hypersensitivity are evidently mediated by different mechanisms.

Perhaps the most common example of

delayed hypersensitivity, however, is that which occurs in infectious processes. Raffel states: "Delayed allergy is a characteristic response of the body in various infections. . ." Among the chronic bacterial diseases, manifestations of hypersensitivity are most striking in tuberculosis—where, indeed, the tissue injury resulting from hypersensitivity plays a considerable part in the pathogenesis of the disease. The presence of hypersensitivity in tuberculosis is readily demonstrable by use of the well-known tuberculin skin test.

Among the known forms of clinical allergy, one which is recognized and treated less frequently than most is bacterial allergy, i.e., hypersensitivity to bacteria or bacterial protein. Although bacterial allergy is difficult to confirm by skin or other diagnostic tests, other clinical factors—such as the individual history of the patient and the consistent association of allergic symptoms with the presence of infection—are usually sufficient for correct diagnosis.

Bacterial allergy falls into the category of the delayed hypersensitivities. What we have referred to above as "asthmatic bronchitis" or "bronchitis with wheezing" is, in actuality, a classic example of bacterial allergy.

In so-called "asthmatic bronchitis", the offending antigen is a microbial organism, most often one of the common etiologic factors in upper respiratory infections, which acts to sensitize the respiratory tract on its initial exposure. Clinically, manifestations of this initial exposure are limited to the upper respiratory tract and, in quality, are those of the common cold.

The induction or incubation period in "asthmatic bronchitis" usually passes without clinical notice, except in children who are particularly susceptible to colds. The incubation periods of other infectious diseases with hypersensitivity components are well known—for example, eight to 12 days in measles, 14 to 21 days in chicken pox, eight to 12 days in small pox, 14 to 21

days in mumps. The minimum length of the incubation period in "asthmatic bronchitis" is seven to 10 days. Its maximum length cannot be fixed except in terms of the time required for the individual patient to develop clinical sensitization to the specific bacterial antigen. Conceivably, this might not occur in less than two successive winters.

Once clinical sensitization is established, the next significant exposure to the specific bacterial antigen will evoke a violent allergic response. In so-called "asthmatic bronchitis", this response takes the form of spasmodic coughing and/or wheezing. As I have stated above, the resultant respiratory difficulty is usually your first exposure to this clinical situation.

Most of us can refer to our own practice and find cases of this sort where intervals of a year or more elapsed between two such episodes of infectious disease accompanied by wheezing. This, of course, is a result of cellular memory functioning as part of the hypersensitive state.

The final element in Raffel's definition of delayed hypersensitivity is the ability to successfully hyposensitize the patient against the offending antigen. Although hyposensitization is more complex and time-consuming in bacterial allergy than in some other allergies, dramatic results can sometimes be achieved and the technique, as a technique, has validity.

Further confirmation of the immunologic basis of "asthmatic bronchitis" can be obtained if we view it alongside the accepted definition of bronchial asthma. Bronchial asthma is defined as a symptom complex consisting of retrosternal oppression, recurring dyspnea, and wheezing, more pronounced in the expiratory phase of breathing (sibilant and sonorous rales), resulting from an antigen-antibody (i.e., allergic or hypersensitivity) reaction. These symptoms are triggered by sensitization and subsequent exposure to inhalants, foods, injectants, drugs, or infecting microbial organisms, or by any significant assault on the sensitized

respiratory mechanisms or body by external irritants or physical or emotional stress. The bronchiolar pathology in bronchial asthma consists of edema, hypersecretion and spasm of the smooth muscle layer.

How does "asthmatic bronchitis" compare with bronchial asthma? In symptomatology, the two are identical, being marked by retrosternal oppression (although this is not usually a complaint in the younger child), recurring dyspnea, and pronounced wheezing in the expiratory phase (sibilant and sonorous rales). The pathologic findings—edema, hypersecretion, and smooth-muscle spasm—are also identical. In etiology, "asthmatic bronchitis" is the result of an antigen-antibody reaction in which the offending antigen is an infecting microbial organism.

How, then, does "asthmatic bronchitis" differ from bronchial asthma? Traditionally, the only clinical differences noted have been differences of degree—in fever and in violence of manifestations. These differences may be attributable merely to the varying ages of the patients involved. In any event, at this early stage in the development of the condition, patterns have not been established firmly enough to draw significant conclusions in terms of the disease itself.

Some physicians in general practice are of the opinion that their young patients will outgrow "asthmatic bronchitis". I would be hard pressed to estimate the number of cases of bronchial asthma I have treated—whose parents had been told that their children would soon outgrow their "asthmatic bronchitis".

Bronchial asthma, considered dynamically, can be divided into three distinct phases. Peshkin has described them as phases of respiratory oppression, wheezing, and attack.

1. *Respiratory or retrosternal oppression.* This is a subjective symptom, of which only older children may complain. Thus, it is seldom a significant factor in bronchial asthma in the younger child. It consists of

a sense of tightness or heaviness in the chest, along with difficulty in drawing a deep breath. No wheezing is audible at this stage.

2. *Wheezing or pre-attack phase.* This stage of bronchial asthma sometimes appears insidiously after repeated upper respiratory infections, or it may even appear concurrently with such an infection. In other instances, wheezing may develop suddenly and persist for several days, at which time upper respiratory infection becomes manifest. Symptoms during this stage of bronchial asthma are of varying degrees: at first they are not too troublesome; later, as the disease progresses, they intensify. During this phase, the symptom (wheezing) is principally referable to the variable bronchitic, moist and dry, sibilant and sonorous rales heard in the chest. Dyspnea may be so mild as to escape attention, or it may be pronounced. Symptoms may or may not be related to seasons of the year. During intervals of remission, there may be coughing, some wheezing, or complete freedom from symptoms.

It is this phase of bronchial asthma, the wheezing or pre-attack phase, that is frequently erroneously labeled "asthmatic bronchitis".

3. *The attack phase.* The attack stage represents the peak of the asthmatic syndrome; it presents the classic picture of bronchial asthma and as such is easily recognized. The asthmatic attack usually has an acute onset and may last for a few hours or for several days. The most striking aspect of the asthmatic attack is the pronounced wheezing during the expiratory phase of breathing. This, along with the characteristic posture and marked dyspnea, permits ready diagnosis. The wheezing, often easily heard at a distance, has been characterized as "music".

Chest examination reveals breathing to be labored, shallow and rapid. As a result of severe air-hunger, the shoulders are raised and the suprasternal notch is retracted in an effort to get sufficient air. Obstruction of the larger bronchi prevents empty-

ing the lungs completely, and expiration is usually prolonged. Occasionally some degree of cyanosis may be noted. Percussion reveals an increase in pulmonary resonance over the entire chest. On auscultation, one hears shifting sibilant and sonorous rales throughout the entire chest, which usually obscure other chest sounds. Normal breath sounds are extremely variable.

In very young children, an acute asthmatic attack may result in an alarming increase in respiration rate and pulse, with spasms of coughing or croup with fever. In some instances, this condition can be mistakenly diagnosed as acute pneumonia.

Once this stage of bronchial asthma has been reached, an attack may be precipitated by inhalant allergens, infecting microbial agents, or other triggering factors. In the very young child, if the attack was precipitated by infectious factors, the nasal and pharyngeal mucosa will be red and congested. If the attack was precipitated by an inhalant allergen, there may be a watery discharge from the nose, and the nasal mucosa presents the typical pale, boggy appearance characteristic of allergic rhinitis. In the older child, this difference is not always present, and often even the experienced physician will have difficulty in determining the presence or absence of infection.

A nasal smear, stained with Wright's stain, sometimes helps in differentiating the cause of the attack. In the presence of acute infection, an abundance of neutrophils is present, whereas in a predominantly allergic situation eosinophiles will be observed throughout the microscopic field.

When an attack of asthma persists for more than 48 hours in spite of repeated injections of a bronchodilator such as epinephrine hydrochloride, it is referred to as status asthmaticus.

When asthma continues over a long period of time, despite specific anti-allergic treatment, and symptoms are continuous or only partially relieved, it is referred to as chronic intractable asthma.

Once the presence of bronchial asthma—rather than “asthmatic bronchitis”—has been established, what therapeutic steps should be taken?

The first step in a treatment-program for bronchial asthma should be a thorough personal and familial history. This will often provide invaluable leads in the final determination of specific sensitivities, as well as offer a sound basis for understanding emotional and other non-allergenic factors which may contribute to or complicate the problem. History-taking should continue through the entire relationship with the patient, since previously unobtainable information may be revealed, and new contributory factors may develop.

A careful physical examination will help pinpoint the specific organs or organ systems involved in the illness, and indicate the possible need for palliative medications. Ancillary office and laboratory studies may sometimes amplify understanding of the illness. These studies include nasal smears, complete blood count, chest and/or sinus x-ray, and pulmonary function studies.

An allergic diagnostic study, making use of scratch and intradermal testing techniques, will usually reveal specific antigens to which the patient is, will be, or may have been, sensitized.

All material obtained from the history, physical examination, and allergic diagnostic study must be correlated so as to form the basis of a complete therapeutic blueprint for the individual patient. Plans should cover not only specific antigens to be injected, but also frequency of visits, projected duration of treatment, and any other data which may be considered pertinent.

Basic to any long-range successful program of anti-asthmatic treatment is a solid foundation of cooperation on the part of the patient and his parents. After plans have been formulated and treatment is about to start, one should schedule a meeting with the patient and his family, at which time all aspects of the problem should

be aired. The parents should be made aware of the nature and length of the anticipated program, approximate costs, what one hopes to accomplish with hyposensitization, palliative medications that are available in case of emergency. Parents should be reassured that the situation can be kept under control, and that a successful outcome is to be expected.

At the same time, possible complicating factors should be explained. Young children with allergic disease of the lower respiratory tract not infrequently develop other respiratory allergy, specifically hay fever or sensitivity to other inhalants. In addition to this broadening of the allergic spectrum, an increased frequency of upper respiratory infections is to be expected in these children. Frequent infections, in turn, may open the way for still other manifestations of allergy. However, in most instances, as long as the possibility of complicating developments is remembered, effective management is likely.

As in all allergic situations where avoidance is not possible, specific hyposensitization, when available, is the treatment of choice in bacterial allergy. Complicating microbial infections must, of course, be

treated. Simple palliative measures may be useful to relieve acute phases of the illness, but antihistamines are specifically contraindicated, since their atropine-like effect in the bronchi will only serve to further compromise the already narrowed airway. Adrenal corticosteroids—of value in selected instances—should be reserved for us only in critical situations.

In closing, let me repeat the words of Herxheimer: bronchitis is a symptom of asthma. There is no such thing as asthmatic bronchitis.

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16 East 79th Street
New York 21, New York

Houseplant Presents Hazard

A decorative houseplant, termed Dieffenbachia and sometimes called "dumb cane," can produce "alarmingly severe" symptoms if taken into the mouth.

A child or uninformed adult could be subjected to unnecessary sickness or death by ingestion of this common potted plant, Drs. George Drach and Walter H. Maloney said in the June 29th Journal of the American

Medical Association.

Ingestion may result in severe corrosive burns of the mouth, throat, esophagus and stomach, they said. Generalized complications arise from absorption of its main toxic component, oxalate.

The number of these plants present in homes can scarcely be estimated and Dieffenbachia also is used in public places.

Management of Flexor Tendon Injuries

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A plan for treatment for hand injuries, especially those involving the flexor tendons, is outlined and discussed.

A RECENT REPORT of the U.S. Safety Council shows that 27% of all work injuries occur to the hand and fingers. Therefore, one of the most common problems found in the emergency room or physician's office involves laceration of the hand and a fair number of these include severance of one or more tendons. Just because such a structure is divided and its function is absent, many repairs are done unnecessarily and improperly, thus giving less than the optimal final result. In many cases this is brought about by the fear of being accused of negligence. There are few, if any, flexor tendon injuries that cannot be cared for adequately by primary skin coverage followed by secondary reconstruction.

In few locations in the human body do so many vital movable structures lie in such a confined space. The hand, whose activity is primarily mobility and sensibility, may be largely or totally incapacitated by relatively minor damage, due to the fine balance between the prime movers of the hand. These are the long flexors, the long extensors, and the intrinsic group.

General Considerations

The overall condition of the patient must be assessed and life endangering injuries

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cared for in the order of their importance. A history of the nature of the wound, the surroundings in which it occurred, and previous treatment are essential in determining the type and extent of the primary regime. Definitive tendon surgery is contraindicated in dirty or crushing injuries with skin damage and unstable fractures. Those which have occurred over six to eight hours prior to examination and wounds which have been probed and handled in previous examinations are also poor candidates. In those cases where potential serious contamination is present, primary tendon repair is never permissible.

Location of the tendon injury is most important in determining what type of repair is indicated. The volar surface is divided into zones for repair of flexor tendons. (See Figure 1)

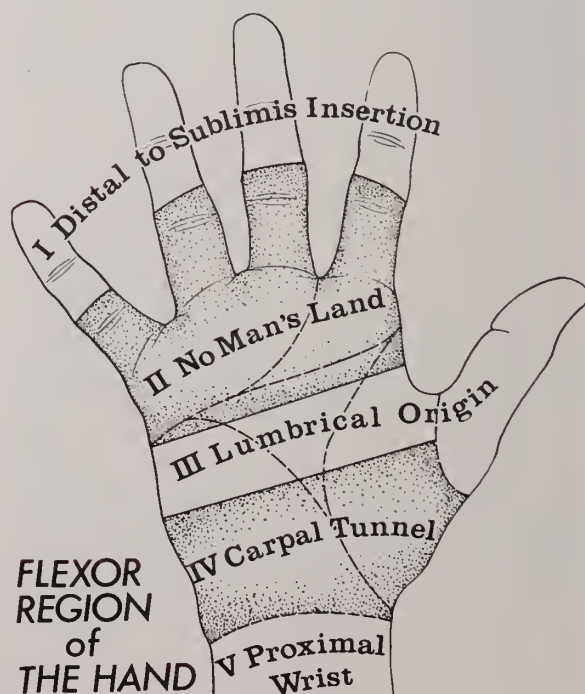


FIGURE 1

The surgeon should have anesthesia, adequate assistance, and proper operating room facilities and instruments available. He should have a bloodless field secured by a pneumatic tourniquet. In a field in which multiple structures have been damaged, excessive hemorrhage makes positive identification extremely difficult. The post-operative picture of such repairs will frequently show tendon to nerve sutures as well as further damage to surrounding structures.

Finally, the surgeon should have concise knowledge of the regional anatomy, in addition to adequate experience and technical skill. He should be able to make incisions along the proper skin lines as well as to properly extend the original lacerations to allow optimal exposure without post-opera-



FIGURE II

A,B,&C ARE INCORRECT EXPOSURES OR EXTENSIONS OF PRE-EXISTING LACERATIONS. a,b,&c ARE CORRECT SURGICAL INCISIONS AND EXTENSIONS.

tive contractures. (See figure 2) He should also be aware of the need for atraumatic handling of tendons and other soft tissues.

Physiology and Philosophy of Tendon Repair

Tendons in the hand are found in two entirely different anatomical situations: that in which the flexor tendons are found freely gliding within synovial sheaths, and that in which tendons are surrounded by loose areolar tissue called paratenon.

When the former are cut, very little healing reaction occurs due to the poor vascular supply. When the ends are exposed at operation they are found to be smooth, rounded and non-adherent. The second type has an abundant blood supply and when severed heal with marked proliferation and adherence to surrounding tissue.

Recognition of this difference in the healing phenomenon and an understanding of the physiological process are important in deciding the type of surgical repair to be done in individual cases.

The severed tendon is repaired solely to regain the function which was lost. The time of repair is decided by the condition of the wound, the available facilities and the decision of the surgeon that use can be restored without danger to overall function of the hand. In cases in which injury has not caused a loss of function, repair is certainly not necessary. Where restoration of lost function gives the possibility of loss of a more important function, again, repair is not warranted.

Treatment of Flexor Tendon Lacerations in Fingers

1. FDP—Distal to Sublimis Insertion
 - A. Primary repair with advancement into bone
 - B. When FDP has retracted into palm
 1. No repair
 2. Tenodesis of distal joint
 3. Arthrodesis of distal joint
 4. Thin free tendon graft

In this area the flexor digitorum profundus is the only tendon present. If the severance has occurred within 1 cm. of the

insertion into the base of the distal phalanx, the distal segment should be excised and the proximal end fixed to raw bone at the old insertion. A pull-out Bunnell type suture of #34 stainless steel wire is woven through the tendon, passed through the distal phalanx and tied over a button on the nail.

If the laceration is further proximally, advancement into the old insertion will cause a flexion contracture of the entire digit. Primary tendon repair in this region will adhere over the volar plate of the distal joint preventing motion. If repair is attempted too far proximally in the sublimis hiatus the range of motion of the sublimis tendon may be decreased.

If the severed proximal end has retracted into the palm, treatment varies with the situation. In some people with naturally tight joints no repair is needed. Repair is seldom necessary in the minor hand, in the ring or little finger of the major hand, in elderly people or in certain occupations. In cases in which a more functional position of the distal phalanx is important, arthrodesis or tenodesis is done. Tenodesis is most easily accomplished by fixing the proximal end of the distal segment to raw bone distal to the sublimis insertion.

Very rarely, in people whose occupation requires active motion of the distal joint, a thin free graft may be threaded through the sublimis hiatus and inserted into the distal phalanx. However, this procedure may cause even greater difficulties by embarrassing the normal sublimis function.

II. Mid-palmar Crease to the Sublimis Insertion ("No-man's Land")

A. FDP only

1. No repair
2. Tenodesis of distal joint (primary or secondary)
3. Arthrodesis of distal joint (primary or secondary)

B. FDS only—No repair

C. FDP and FDS—Secondary graft to FDP

When the profundus alone is severed, the

treatment may be no tendon repair, tenodesis or arthrodesis of the distal joint.

When the sublimis alone is severed no repair is in order. Occasionally the remnant may become adherent and cause decreased range of motion or flexion contracture. This may be treated by excision of the sublimis tendon. Another rare finding, in individuals with hyperflexible joints, is a hyperextension deformity of the mid-joint. This may be handled by capsular advancement or tenodesis of the mid-joint in slight flexion.

The treatment of lacerations of both tendons in this area is controversial. It has been shown that the best results follow simple debridement and primary wound closure with secondary reconstruction when tissue equilibrium is regained. Secondary repair requires excision of the sublimis tendon and a free tendon graft from the flexor digitorum profundus in the palm to the base of the distal phalanx. The fibrous canal and sheath are excised leaving pulleys over the proximal and middle phalanges to prevent bow-stringing of the tendon grafts. The distal attachment is to raw bone of the distal phalanx. The proximal junction is secured with a permanent Bunnell stitch of #34 stainless steel wire. Particular emphasis on the correct tension is most important in this stage of the repair. The lumbrical muscle is then sutured around the proximal anastomosis with fine catgut.

A dorsal plaster splint is applied with the fingers and wrist in moderate flexion. Care is taken to place no volar obstruction which might produce resistance in case inadvertent flexion does occur. The skin sutures are removed in two weeks. The pull-out wire at the distal insertion is taken out 21 to 24 days post-operatively and the patient is instructed in active flexion exercises to be done in lukewarm water three times daily. Between exercise periods the dorsal splint is re-applied for protection against forced extension. After six weeks the splint is removed and full activity is begun. During the fifth post-operative week, adhesions may be broken by controlled passive extension to

increase the rapidity of functional return. If this is done prior to the fifth week, rupture of the anastomosis may occur. If done later, the adhesions have become fibrous and the chances of breaking them are poor. Active exercise and the use of wooden blocks of proper size as described by Brunnell may be helpful.

In cases of longstanding injury the problem of so-called paradoxical intrinsic motion may be encountered. With absence of the long flexors, the only flexion possible occurs by intrinsic muscle action at the proximal joint. This initiates a reflex pathway. When active long flexor power is again present the individual still uses the intrinsic for flexion. Since intrinsic action includes extension of the middle and distal joints, as well as flexion of the proximal joints, this resists the regained long flexor function. This abnormal reflex arc often poses a great problem in functional return.

Many advocate primary repair in "No-man's Land" and some good results are reported. However it has been shown that the overall results are markedly inferior to secondary grafting in this type of injury.

Children have a remarkable ability to regenerate and repair. In sharply lacerated clean wounds, primary repair often yields excellent results particularly when all conditions are optimal.

III. Lumbrical Origin—Mid-palm

A. FDP only—primary repair

B. FDS only

1. No repair

2. Primary repair

C. FDP and FDS

1. Primary repair of both

2. Primary repair of FDP

When only the flexor digitorum profundus is severed, primary repair is usually the treatment of choice. In some cases in which the fingers were in marked flexion at the time of injury, the juncture may be distal to the mid-palmar crease when the digits are fully extended. This then becomes a laceration in "No-man's Land" and should be treated accordingly.

When the flexor digitorum sublimis alone is severed no repair is usually done. In cleanly incised wounds, where both ends of the tendon are in plain view, primary repair with Brunnell suture may be done.

When the profundus and sublimis tendons are both severed, the usual treatment of choice is excision of the sublimis with primary repair of the profundus tendon. When multiple tendons are not involved primary repair of both the flexor digitorum profundus and flexor digitorum sublimis may be done. When this is done the lumbrical muscle should be interposed between the repaired tendons to prevent adhesions which limit the excursion of the tendons.

IV. Carpal Tunnel—Primary Repair of FDP with Decompression

The carpal tunnel is bounded on the radial side by the tuberosity of the greater multangular and the navicular, dorsally by the carpal bones and ulnarward by the hook of the hamate and pisiform. These are all unyielding bony structures. The volar aspect is covered by the dense fibrous transverse carpal ligament, thus completing a rigid canal through which run eight finger flexors, the flexor pollicis longus, and the median nerve. At this level a primary repair of severed profundus tendons and the median nerve should be done after excision of damaged sublimis tendons. Excision of the transverse carpal ligament decreases the possibility of pressure necrosis with its resultant impairment of nerve regeneration and tendon function.

V. Proximal Wrist

A. Primary repair of FDP

B. FDP and FDS

Here are found the eight finger flexors, the flexor pollicis longus, the median and ulnar nerves, as well as the palmaris longus, flexor carpi radialis and the flexor carpi ulnaris tendons. The palmaris longus is never repaired. The flexor digitorum sublimis tendons and the wrist flexors are of secondary importance and their repair, especially in complex wounds, may compromise the

result of the repair of the more important structures. If, in this area, all tendons and both nerves were repaired, the result would be a solid mass of scar with the possibility of little functional return in either nerve or tendon. The usual plan of treatment is repair of the flexor digitorum profundus, the flexor pollicis longus and both nerves. Occasionally both profundus and sublimis tendons may be repaired if multiple tendons are not involved. The flexor carpi ulnaris and the flexor carpi radialis, being enclosed in paratenon, will usually heal with good functional results without repair.

Fibrosis is the enemy of good functional return in both tendon and nerve repair and treatment should prevent fibrosis as much as possible. For example, in cases in which the flexor carpi ulnaris and ulnar nerve are both severed, fibrosis following repair of both at the same time would jeopardize the chance of functional return of the nerve. In these cases the flexor carpi ulnaris should seldom, if ever, be repaired and it will usually be found that by the time the nerve regeneration is complete there will be little functional loss in the power of the flexor carpi ulnaris.

Flexor Tendon Lacerations of the Thumb

I. Phalangeal Area—Primary Advancement and Tendon-Bone Suture

The treatment of choice here is primary advancement of the tendon following excision of the distal portion, with tendon to bone anastomosis using a pull-out wire. This will usually give very satisfactory results since active flexion of the distal segment of the thumb is of less importance and complexity than that found in the fingers.

II. Proximal Joint Area

A. Primary direct suture

B. Advancement procedure or lengthening at wrist

In most cases primary repair of the tendon with a Bunnell stitch is indicated. The site of anastomosis must not be placed in the narrow confined space between the sesamoid bones. Another procedure which may be used in this area takes advantage of the fact that the flexor pollicis longus is tendinous well proximal to the wrist. The tendon may be lengthened at the wrist by means of a Z-plasty and the distal end may be advanced and sutured to raw bone at the base of the distal phalanx. This requires an additional incision and is a more complex procedure and therefore is rarely used.

III. Deep Thenar Area

A. Secondary free graft

B. Reconstruction using FDS to the long finger

In this area, where the flexor pollicis longus glides through a confined space close to the median nerve and its very important motor branch, primary care should consist only of debridement and closure of the wound. As a secondary procedure, a free tendon graft may be used in the same method as is done in the finger. If the flexor pollicis longus is not adequate due to contracture or other reason, the flexor digitorum sublimis to the long finger may be used as a substitute, plus a free graft if necessary. Contracture is common since the proximal tendon is not anchored by a lumbrical muscle as it is in the finger flexors, and the proximal tendon may retract into the wrist.

IV. Proximal Carpal Tunnel and Wrist—Primary Suture with Decompression

The appropriate treatment here consists of primary suture of the divided flexor pollicis longus with decompression of the transverse carpal ligament if necessary. As previously described, twelve tendons and two nerves are in close approximation in this area and, in complex wounds, primary repair consists of suture of the flexor pollicis longus, flexor digitorum profundus to all fingers and both median and ulnar nerves.

Conclusion

Primary injuries to the flexor tendons of the hand are commonly seen and are among the most difficult to treat.

A general plan for primary treatment of hand injuries is given.

A philosophy of tendon repair is presented with attention to the varied physiology and anatomy of flexor tendons in different regions of the hand.

A plan for treatment of injuries to the flexor tendons is outlined and discussed.

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Physicians and the Postal Service

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The Diagnosis of Vascular, Neurovascular, and Neuropathy Diseases of the Upper Extremities

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The clinical features of the more common vascular, neurovascular and neurologic disorders are presented. An attempt is made to simplify the examination of the patient so that diagnosis may be arrived at in an orderly fashion. A guide sheet, which has been found useful in studying these patients, is included.

THERE IS A LONG LIST of vascular, neurovascular, and neurologic disorders that must be considered when the patient complains of upper extremity pain, paresthesia, numbness, coldness, weakness, swelling or sweating; or manifests digital color changes, digital ulceration or gangrene. It is the purpose of this paper to present the clinical features that facilitate the differential diagnosis of these upper extremity disorders.

The vascular disease may be arterial or venous. Arterial disease is manifested by:

- (1) Coldness, pallor, cyanosis or rubor, pain and trophic changes of the fingers.
- (2) Digital ulceration or digital gangrene.
- (3) Pallor of the hand on elevation; delay

in vein filling on dependency.

- (4) Absent or diminished pulsations in the radial, ulnar, brachial or axillary arteries.
- (5) Reduced or unequal blood pressure determinations.
- (6) Reduced or unequal oscillometric readings.
- (7) Reduced radial artery pulsations on carrying out scalenus anticus syndrome tests.
- (8) Raynaud's phenomenon.

Claudication, a cardinal symptom of arterial insufficiency of the lower extremities, is rarely distinct in the arms. The arterial insufficiency is manifest, rather, by the arm that is weak and becomes quickly fatigued. If the arterial insufficiency is intermittent, as occurs in the compression syndrome of the shoulder girdle, arm fatigue on overhead activity may be the only symptom of arterial disorder.

Diseases which may cause arterial insufficiency of the upper extremities are:

- (1) Atherosclerotic occlusive disease:
 - a—Of the arch of the aorta and supra-aortic trunks.
 - b—Of the more peripheral main arteries.
 - c—Primarily of the digital arteries.
- (2) Thrombo-angiitis obliterans.
- (3) Thrombotic occlusions (usually traumatic).
- (4) Embolic occlusion.
- (5) Aneurysmal disease, post stenotic, arteriosclerotic and false.
- (6) Arteriovenous fistula.
- (7) Raynaud's phenomenon.
- (8) The compression syndrome of the shoulder girdle.

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The lesion may be situated at any point from the arch of the aorta to the digital arteries themselves. (Fig. 1) The probable

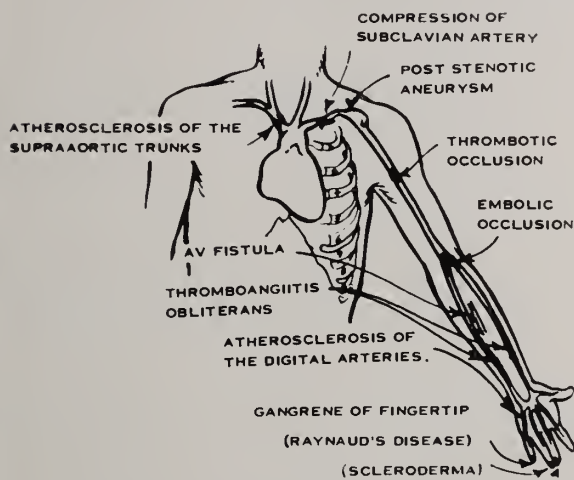


Fig. 1. Diseases which may cause arterial insufficiency of the upper extremities. Modified from Hardy, "Surgery of the Aorta and its Branches." J. B. Lippincott Co., 1960.

level and nature of the arterial lesion can usually be established on physical examination. Palpation above the clavicle may disclose a lump representing a cervical rib, a thrill indicating subclavian artery compression, a pulsating mass representing a post stenotic subclavian artery aneurysm.

bruit, suggest occlusive disease of the arch of the aorta. Normal axillary artery pulsations and absent brachial artery pulsations suggest embolic or thrombotic occlusion of the brachial artery.

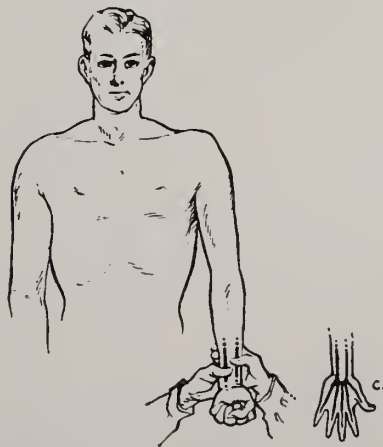
Digital ischemia may reflect a local arterial change such as occurs in primary digital atherosclerosis or in primary Raynaud's disease. The digital ischemia may reflect a proximally situated lesion, such as atherosclerosis of the subclavian, axillary or brachial artery, thrombo-angiitis obliterans, subclavian artery compression from a cervical rib, or an axillary or subclavian artery aneurysm. These lesions may reduce the flow in the digital arteries to critical levels, even in the presence of reasonably good radial and ulnar pulses.

Digital ulceration and gangrene, in the presence of radial and ulnar pulses, may also occur in scleroderma, systemic lupus erythematosus, and cryoproteinemia.^{1,2,3}

Allen's Test. (Fig. 2) This test is used to establish patency of the ulnar and radial arteries. It may also be used to demonstrate patency or occlusion of the digital arteries. The patient elevates his hand overhead and makes a tight fist. The examiner occludes



4. (A) ALLEN'S RADIAL AND ULNAR ARTERY TEST.



4. (B) ALLEN'S RADIAL AND ULNAR ARTERY TEST.

Fig. 2. Allen's test for patency of the radial and ulnar arteries.

A supra-clavicular bruit may indicate partial occlusion of the subclavian artery. Diminished or absent axillary artery pulsations, in association with diminished or absent carotid artery pulsations or a carotid

both arteries of the patient's wrist with his thumbs. The patient's hand is lowered to the dependent position. The patient is asked to open his fist, and the observer notes the pallor of the patient's palm. Each artery is

then released one at a time, and the patency of each vessel is determined by the flush of

of arterial disease of the upper extremity. The supra-aortic trunks and the upper extremity arteries may be visualized by the following methods. (Fig. 3)

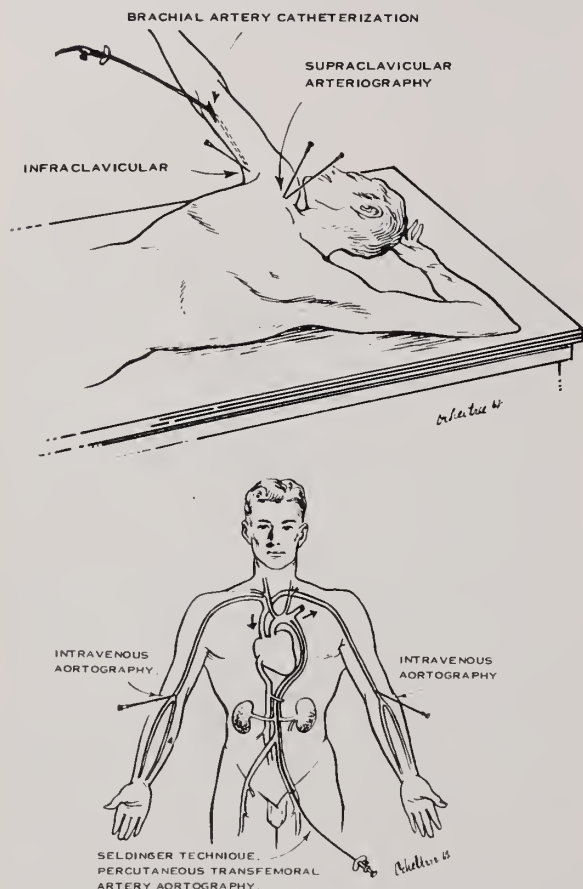


Fig. 3. Methods of x-ray visualization of the supra-aortic trunk and upper extremity arteries.

blood in the corresponding area of the palm supplied by the respective artery.

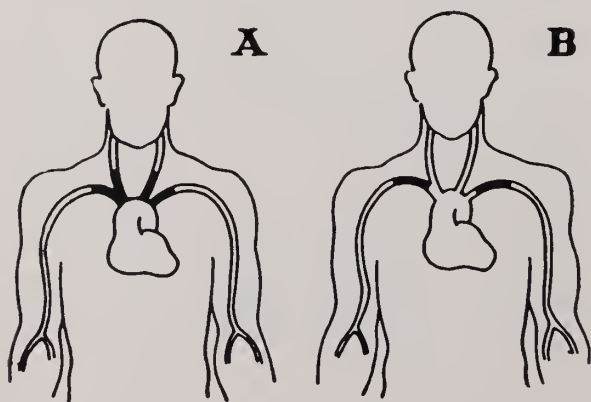


Fig. 4. a—The aortic arch syndrome. Atherosclerotic occlusive disease of the innominate, left carotid and left subclavian arteries.

b—Occlusive disease limited to the subclavian arteries.

Arteriography. X-ray visualization is important in determining the nature and level

- (a) The supra-clavicular approach.^{4,5} A 17 gauge needle is inserted percutaneous above the clavicle into the subclavian artery.
- (b) The infra-clavicular approach.⁶ Percutaneous insertion of a needle into the axillary artery under the clavicle. A catheter may be threaded through the needle into the subclavian artery, if desired.
- (c) Retrograde arterial catheterization via the brachial artery or the femoral artery. (Seldinger technique).⁷
- (d) Intravenous angiocardiology.⁸

The Aortic Arch Syndrome. (Fig. 4) This syndrome consists of ischemic manifestations in the head and in the upper extremities due to segmental occlusion of the innominate artery, the left common carotid artery, the left subclavian artery, i.e., of the supra-aortic trunks. It is also referred to as pulseless disease, occlusive disease of the arch of the aorta, the syndrome of occlusion of the supra-aortic trunks, Martorell's syndrome. Takayasu's arteritis of young women, characterized by pulselessness and visual disturbance is a related entity.

In a fully developed case of aortic arch syndrome, the following signs and symptoms are presented:⁹

- (1) Atrophy of the face.
- (2) Orthostatic syncope and epileptic like attacks.
- (3) Headaches and cervical pain.
- (4) Visual impairment.
- (5) Weakness and paresthesias of the upper extremities.
- (6) Progressive weight loss.
- (7) Absence of carotid pulses, bilaterally.
- (8) Absence of subclavian, brachial, cubital and radial pulses, bilaterally.
- (9) Absence or marked decrease of os-

cillometric readings of both upper extremities.

- (10) Ischemic lesions of the hand.
- (11) Slight ocular nerve atrophy without papilledema.

Venous Diseases of the Upper Extremities

We have observed:

- (1) Acute surface vein thrombophlebitis.
- (2) Migratory phlebitis.
- (3) Deep vein thrombophlebitis.
- (4) Effort thrombosis.
- (5) Acrocyanosis.
- (6) Venous manifestations of the compression syndrome of the shoulder girdle.
- (7) The superior vena cava syndrome.

Acute surface vein thrombophlebitis is readily recognized. The inflamed and thrombosed vein can be seen and felt. In the absence of trauma or recent intravenous medication, latent malignancy must be considered. The phenomenon may reflect an allergy to nicotine or drug intake, or be a manifestation of thrombo-angiitis obliterans.

Migratory phlebitis usually attacks short segments of a surface vein. The episodes are transient and veins in the lower extremities are usually similarly affected.

Deep vein obstruction is manifested by arm edema, diffuse or mottled cyanotic skin discoloration, distention of the superficial veins around the shoulder and upper chest, and a variable degree of aching pain. The arm swelling that follows radical mastectomy usually reflects axillary vein thrombosis. Arm swelling may also be due to obstruction of the arm lymphatics. Axillary lymphadenopathy is significant.

Venous pressure determinations and venography are essential to the diagnosis of deep vein disease. There is a marked increase in venous pressure on the affected side, and this difference is more pronounced with hand movements. (Fig. 5) Venography is readily performed by injecting 40 cc. of 25%

Hypaque into a cubital vein. In most instances of deep vein disease, venography reveals obstruction to be where the vein

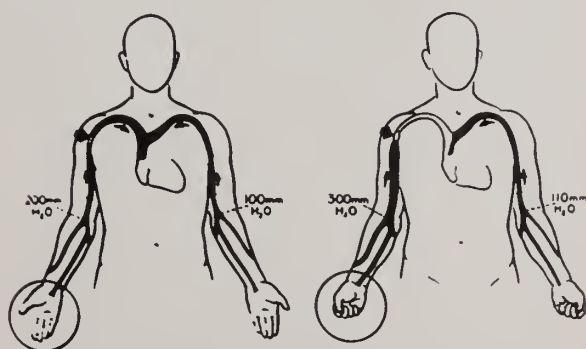


Fig. 5. Venous pressure determinations to demonstrate axillary vein obstruction. Vigorous flexion and extension of the hands accentuate the pressure differential. Bunch, G. E., Jr. *A Primer of Venous Disease*. Lea & Febiger. Phila. 1930.

passes between the costoclavicular ligament and subclavius muscle anterior, and the first rib posteriorly.

Effort Thrombosis

Effort thrombosis refers to primary acute thrombosis of the axillary vein following an unusual or sudden arm effort. It has resulted from swinging a golf club, pitching a baseball, or from a casual strain such as holding an overhead strap, as in a subway. The condition occurs in young healthy individuals, and tends to involve the right arm most frequently. In addition to the symptoms and signs of deep vein obstruction noted above, a tender cord can be felt on the inner aspect of the arm over the brachial vein, and continuing upward into the axillary vein.

Chronic arm swelling may reflect a past episode of effort thrombosis.

Acrocyanosis

Acrocyanosis is a neurovascular disease characterized by painless and persistent coldness and cyanosis of the hands and fingers. There is a single color phase reaction in contradistinction to the multiple color phase reaction of Raynaud's phenomenon. The pathology is probably entirely local, consisting of arteriole spasm, followed by secondary dilatation of the capillaries and venules.

The patient is usually a woman who has noticed almost constant coldness and bluish discoloration of the fingers and hands for many years. The coldness and bluish discoloration are usually more marked in the winter, but may be present, to a lesser extent, in the warmer months. There are no episodes of blanching. Trophic changes, ulcerations and gangrene do not occur. Examination of the peripheral arteries will not reveal any evidence of occlusive arterial disease. The presence of pulmonary or cardiac disease, or of the compression syndrome of the shoulder, which might produce cyanosis, must be excluded.

The Superior Vena Cava Syndrome

There is bilateral and usually symmetrical distention of the superficial veins of the upper extremities in association with distention of the vein of the neck and head. In time, collateralization produces distention of the veins of the anterior thorax, shoulder and abdomen. The manifestations result from obstruction of the superior vena cava, or of the innominate veins. The patient complains of severe headache, tinnitus and somnolence. There is cyanosis of the upper half of the body, facial puffiness and edema of the head, neck and arms. The headaches and the cyanosis are increased by instructing the patient to bend forward for several minutes.

Neurovascular Diseases of the Upper Extremity

Neurovascular diseases are those which manifest combined vascular and neurologic defects, and which present symptoms and signs best explained by simultaneous action of both the vascular and the nervous system or interaction of these two systems. The vascular component may be arterial, venous, or both. The neurologic component may be related to the central nervous system, the sympathetic nervous system or both.

Included in the category of neurovascular diseases are Raynaud's disease, Raynaud's

phenomenon, acrocyanosis, the compression syndrome of the shoulder girdle, the causal-gate state, the shoulder-arm-hand syndrome.

Raynaud's Phenomenon and Raynaud's Disease

Raynaud's phenomenon is characterized by attacks of painful digital pallor, digital cyanosis and reactive hyperemia. There is vasoconstriction superimposed on structural digital artery changes. Thus, the classification of the disorder as neurovascular.

Recognition of Raynaud's phenomenon only initiates the diagnostic problem, for the phenomenon may be primary or secondary to a large number of unrelated disorders. The disorder is considered primary or idiopathic, and is called true Raynaud's disease when the attacks occur in emotionally unstable young women, when the symptoms and signs are classic and symmetrical, when the attacks are regularly brought on by exposure of the body or of the hands to cold, and when all possible causes of the disease have been excluded.

Secondary Raynaud's phenomenon tends to be less classic. The sequence of digital color changes is less orderly. The phenomenon is less apt to be bilateral and symmetrical, men as well as women may be affected, and a plausible causative disease exists. Occupational trauma has accounted for most cases of Raynaud's phenomenon that I have seen. (Fig. 6) Thus, it has occurred in baseball catchers, pullman car porters, dentists, pianists, structural steel workers, pneumatic drill workers, mechanics, farmers and butchers. These are individuals in occupations which result in repeated mild trauma to the hands.

Secondary Raynaud's phenomenon may occur in:

- (1) Organic peripheral vascular diseases — atherosclerosis obliterans, thrombo-angiitis obliterans, acute arterial occlusion, thrombotic or embolic; and arterial trauma.
- (2) Collagenous diseases — scleroderma,

rheumatoid arthritis, disseminated lupus erythematosus, nodular panniculitis, peri-arteritis nodosum, dermatomyositis.

- (3) Occupational trauma.
- (4) In the neurovascular compression syndrome of the shoulder girdle.
- (5) The causalgic state.
- (6) In cryoproteinemia. (Cryoglobulins or cryofibrinogens).
- (7) Frostbite.
- (8) The shoulder-arm-hand syndrome.
- (9) Certain neurogenic lesions—multiple sclerosis, transverse myelitis, progressive muscular atrophy, syringomyelia, hemiplegia, paraplegia, spinal cord tumors.
- (10) Drug intoxication—ergot poisoning.
- (11) Polycythemia vera.
- (12) The post splanchnectomy state.
- (13) Diencephalic discharge.



Fig. 6. Raynaud's Phenomenon Secondary to Occupational Trauma. (Patient is a butcher).

Patients who exhibit attacks of Raynaud's phenomenon may simultaneously exhibit electroencephalographic changes. This suggests a diencephalic discharge or cerebral origin of the vasomotor nerve impulses.¹⁰

Determining the cause of Raynaud's

phenomenon may be quite frustrating. Realization that the majority of cases is due to organic peripheral vascular disease, occupational trauma, collagenous diseases, or to the neurovascular compression syndrome of the shoulder girdle narrows the diagnostic problem. Complete work-up of a case of Raynaud's phenomenon includes:¹¹

- (1) Immersion of the affected hand in cold water at about 15° C. (59° F.) for one minute.
- (2) Tests for compression syndromes of the shoulder girdle.
- (3) Plethysmography.
- (4) Arteriography.
- (5) Encephalography.
- (6) Special studies for detection of collagenous diseases:
 - a- Rheumatoid arthritis (sedimentation rate, latex fixation test, C reactive protein).
 - b- Scleroderma (skin biopsy, barium swallow, chest x-ray).
 - c- Systemic lupus erythematosus. (L. E. smear from peripheral blood and from sternal bone marrow, serum protein electrophoretic pattern).
- (7) Blood studies for abnormal clotting of the red blood cells, sludge formation, and red blood cell clumping.
- (8) Blood serum studies for cold precipitable proteins (cryoproteinemia).

The clinical features in significant cryoglobulinemia are:

- a- Cold sensitivity; pain, coldness, numbness, mottling, blanching occasional rubor, cyanosis and livedo reticularis of the extremities.
- b- Bleeding manifestations: purpura, bleeding from the nose and gums, retinal hemorrhages and melena.
- c- Skin lesions: urticaria, ulceration, and rarely gangrene of the digits.³

It is postulated that cryoproteinemia is related to the precipitation of cryoproteins in the peripheral blood vessels. The bleeding tendency is attributed to capillary damage secondary to vascular obstruction. There is no evidence that a disseminating disease is present. The lesions are restricted usually to the extremities.

Neurovascular Compression Syndromes Of the Shoulder Girdle (Thoracic Outlet Syndromes)

Neurovascular compression syndromes of the shoulder girdle are related to the anatomy of the thoracic outlet. (Fig. 7) The

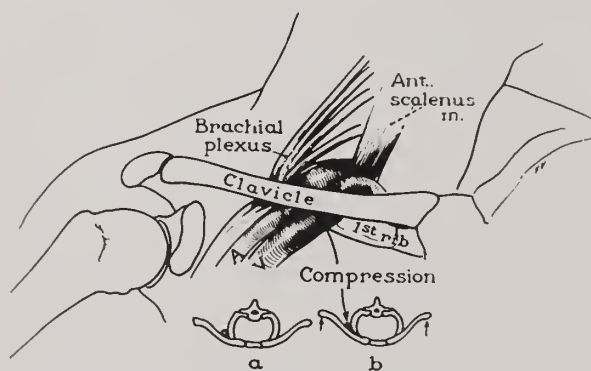


Fig. 7. The Anatomy of the Thoracic Outlet as Related to the Neurovascular Compression Syndrome.

subclavian artery and subclavian vein ascend from the mediastinum, and arch downward into the axilla through the narrow space between the clavicle and the first rib. The artery passes behind the scalenus anticus muscle, and in front of the scalenus medius muscle. Except that it passes anteriorly rather than posteriorly to the scalenus anticus muscle, the subclavian vein has an identical course. Components of the brachial plexus descend from the neck and sympathetic nerve fibers ascend from the thorax to enter the axilla through the same space. Sympathetic nerve fibers accompany the brachial plexus and surround the subclavian artery. The vascular and nerve structures may be compressed individually or in various combinations, producing a variety of neurovascular syndromes.¹²

The compression may be the result of a cervical rib, a hypertrophied transverse pro-

cess, or a hypertrophied transverse process and a dense fibrous band—the cervical rib syndrome; of spasm or hypertrophy of the scalenus anticus muscle—the scalenus anticus syndrome; of compression between the first rib and clavicle—the costoclavicular syndrome; of compression between the coracoid process of the scapula and the pectoralis minor muscle—the pectoralis minor syndrome.¹³

The neurovascular compression may occur only with certain motions, the most common of which is hyperabduction of the arm—the hyperabduction syndrome.

Symptoms and Signs

The symptoms and signs are dependent on compression of the subclavian vessels, the lower cord of the brachial plexus (somatic nerves), and the accompanying vasoconstrictor fibers (sympathetic nerves). Compression of the subclavian artery may produce subclavian artery stenosis or thrombosis, post stenotic subclavian artery aneurysm, peripheral arterial embolization, or peripheral arterial occlusion. Digital ulceration or digital gangrene may occur.

Irritation of the sympathetic vasoconstricting fibers produces pallor of the hand and fingers, coldness and cyanosis, hyperhidrosis, and Raynaud's phenomenon.

Brachial plexus symptoms consist of pain, usually segmental in distribution, hypesthesia, paresthesia, numbness, and muscular weakness.

The pain and paresthesia of the compression syndromes of the shoulder girdle are experienced principally in the mesial aspect of the forearm, the ring and the fifth fingers. This is the distribution of the ulnar nerve, originating from C8 and T1 spinal nerve roots. (Fig. 8) The pain may occasionally be felt in the base of the neck posteriorly, in the deltoid area, in the supraclavicular region, or generalized in the hand and fingers. The pain is aggravated by the use of the arms in overhead activities or in carrying heavy objects.

The motor defect affects principally the

interosseous and hypothenar muscles, and is manifest by hand weakness and interdigital and hypothenar muscular atrophy. There is a loss of strength in spreading or bringing together the fingers. Arterial insufficiency may be superimposed on the neurologic weakness, thus producing a weak-

DERMATOME
C8-T1

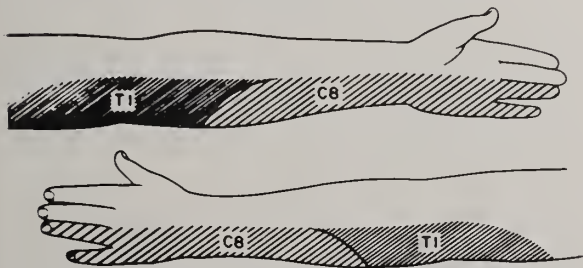


Fig. 8. The pain and paresthesia of compression syndromes of the shoulder are experienced principally in the forearm, the ring and the fifth fingers in the distribution of the ulnar nerve, originating from C8 and T1 spinal nerve roots. Rosati & Lord. *Neurovascular Compression Syndromes of the Shoulder Girdle*. Grune & Stratton. New York, 1961.

ness of the entire limb. This is especially apt to occur when the limb is held in hyperabduction, as in combing the hair.

The symptoms that comprise the thoracic outlet syndrome may be mild, moderate, or severe. The patient with mild involvement complains of a dragging sensation through the shoulder, and a pain distributed over the deltoid area to the elbow.

The patient with moderate involvement may have, in addition, pain and paresthesia in the ulnar aspect of the forearm and hand, and in the 4th and 5th digits, and changes of appearance of the hand such as blanching, bluish duskiness, or increased sweating. The patient with severe involvement may have any of the symptoms already described, and, in addition, loss of sensation, weakness of specific muscles, swelling and soreness or ulceration or gangrene of the tips of the fingers. These findings are rare in the absence of a cervical rib.

Not infrequently, the first indication of the presence of a cervical rib is an acute embolic occlusion of the brachial artery, the embolus having originated in a post-stenotic subclavian artery aneurysm.

Venous Manifestations of the Compression Syndrome of the Shoulder Girdle

There may be:

- (1) Acute subclavian and axillary vein thrombosis—so called effort thrombosis.
- (2) Intermittent subclavian vein obstruction.¹⁴
- (3) Chronic subclavian obstruction.
- (4) Chronic subclavian vein thrombosis.

If the compression syndrome of the shoulder girdle is suspected, in performing venography, the arm must be placed in positions that narrow the costoclavicular space in order to determine the nature of the obstruction or site of the thrombosis.

Diagnosis

Patients presenting any of the following complexes should be especially suspected of having a neurovascular compression:

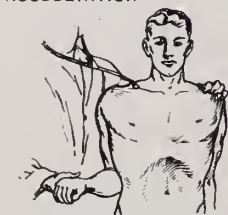
- (1) Pain and paresthesia in the upper extremity of ulnar nerve distribution.
- (2) Unilateral Raynaud's phenomenon.
- (3) Ischemic finger and hand signs.
- (4) Findings suggestive of subclavian artery compression, thrombosis, or post-stenotic subclavian artery aneurysm.
- (5) Clinical manifestations of acute brachial artery occlusion (embolic).
- (6) Unilateral swelling of the upper extremity associated with signs and symptoms of deep vein obstruction.
- (7) Aggravation of the symptoms and signs by particular movements such as carrying heavy weights, hyperabduction of the arm, sleeping with the hands folded behind the head.

Specific Tests Useful in Studying the Neurovascular Compression Syndromes of The Shoulder Girdle (Fig. 9)

These tests are based on maneuvers that increase the compression of the neurovascular structures. They are positive when they reduce the amplitude of radial artery pul-

sations, reproduce or aggravate the patient's symptoms, or produce a bruit in the supra-clavicular area.

BRUIT ON AUSCULTATION

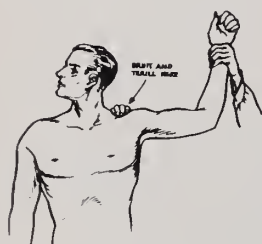


[1] SHOULDER SQUARING TEST. SHOULDERS ARE BACK AND DOWN, CHEST IS OUT.



[2] HYPERABDUCTION TEST.

BRUIT ON AUSCULTATION



[3] ALLEN'S TEST, ARM IS ELEVATED 90°. HEAD IS ROTATED TO THE UNAFFECTED SIDE.



ADSON'S TEST. NECK IS HYPEREXTENDED. HEAD IS TURNED TOWARD AFFECTED SIDE. PATIENT TAKES AND HOLDS A DEEP BREATH.

Fig. 9. Specific tests useful in studying neurovascular compression syndromes of the shoulder girdle.

- a—Shoulder squaring test.
- b—Hyper-abduction test.
- c—Allen's maneuver.
- d—Adson's maneuver.

- (1) The shoulder squaring maneuver. This is an exaggerated military position with the shoulders drawn down and backward. The maneuver narrows the costo-clavicular space by approximating the clavicle to the first rib.
- (2) The hyper-abduction test. This arm is slowly hyperabducted to 180°.
- (3) Allen's maneuver. The arm is elevated sideways to 90°, and externally rotated. The elbow is bent at a right angle. The head is turned toward the unaffected side.
- (4) The Adson maneuver. The patient is instructed to:
 - a—Take and hold a deep breath.
 - b—Extend his neck fully.
 - c—Turn the chin toward the side to

be examined, with the arm at the side.

d—Repeat the maneuver, turning the chin to the opposite side.

- (5) Downward traction on the arm producing forceful decompression of the shoulder.
- (6) Oscillometric readings while performing the above maneuvers.
- (7) Auscultation in the supra-clavicular space for a bruit while performing the above maneuvers.
- (8) Procaine infiltration of the scalenus anticus muscle.

Examination should include study of the patient's posture for shoulder sagging, study of the supra-clavicular area for a mass suggesting a cervical rib, or for a pulsating mass suggesting a post stenotic subclavian artery aneurysm, and for scalenus anticus muscle tenderness.

The examiner listens with a stethoscope to the supra-clavicular area while performing the tests previously described. Neurological examination is necessary to determine sensory or motor defects and muscular atrophy. Evidences of ulnar nerve involvement are of special significance.

Special x-ray examinations include x-rays of the cervical spine and thoracic outlet, angiography of the subclavian artery and more peripheral arteries, and upper extremity venography.

The x-rays of the cervical spine and thoracic outlet are studied for evidence of cervical rib, prominent transverse processes, bony exostosis, cervical and dorsal scoliosis, and any abnormality of the clavicle and first rib. Note is made of any cervical osteoarthritis or spondylosis.

Causalgia

Causalgia, also known as post traumatic reflex sympathetic dystrophy, is a neurovascular syndrome that follows injury to, or an operation on the extremity. Agonizing burning pain, hyperesthesia, and paresthesia

are the chief symptoms. The hand is cold, cyanotic and perspire. Fingers may exhibit Raynaud's phenomenon. The hand is swollen, the skin shiny and atrophic. The syndrome may be associated with acute bone atrophy—so called Sudeck's atrophy.

The Shoulder-Arm-Hand Syndrome

This syndrome is usually characterized by the presence of a primary lesion which causes pain in the shoulder area, such as subdeltoid bursitis, coronary artery occlusion, shoulder trauma or cervical osteo-arthritis. Because of the pain, the shoulder and arm are immobilized spontaneously by the patient. Within a few weeks, a painful shoulder disability develops, followed by pain, swelling and stiffness of the hand and fingers. The skin of the hand and fingers becomes smooth and taut. Color varies from dusky pink to cyanotic, and the skin temperature may be elevated in the early phases of the condition. After three to six months, gradual relief of the painful shoulder occurs with resolution of the swelling of the hand. However, the stiffness and flexion deformity of the fingers persist and may progress, accompanied by atrophy of the subcutaneous tissues and intrinsic muscles of the hand. A Dupuytren's contracture of the palmar fascia may occur. The blood flow to the limb becomes diminished, and the skin temperature falls and the hand becomes cold. The final stage of the disorder is characterized by marked trophic changes in the hands.

Neurologic Diseases of the Upper Extremity

Pain and paresthesia of the upper extremities from neurologic disease may result from lesions at three levels, one, lesions of the spinal nerve roots which form the brachial plexus (anterior primary division of the 5th, 6th, 7th and 8th cervical and 1st dorsal spinal nerve), two, lesions of the brachial plexus itself, and three, lesions of the nerves peripheral to the brachial plexus.

NEUROLOGIC DISEASES OF THE UPPER EXTREMITIES ASSOCIATED WITH PAIN, PARESTHESIA, AND MOTOR DEFICITS

(TABLE)

- I. Lesions of the cervical spinal nerve roots.
 - a—Herniated cervical intervertebral disc syndrome.
 - b—Other causes of root pain, cervical osteoarthritis, etc.
 - c—Acute spinal nerve neuritis of unknown etiology.
- II. Lesions of the brachial plexus.
 - a—Compression syndrome of shoulder girdle.
 - b—Traumatic injuries.
 - c—Metastatic neoplastic disease.
 - d—Idiopathic acroparesthesia.
- III. Lesions peripheral to the brachial plexus.
 - a—Traumatic injuries.
 - b—Entrapment neuropathies, the carpal tunnel syndrome.
 - c—Tumor of the peripheral nerves, neurofibromatosis.
- IV. Bilateral symmetrical peripheral neuritis.
- V. The Landry-Guillain-Barre Syndrome. (Infectious polyneuritis).

The Intervertebral Disc Syndrome

Typical of lesions of the spinal nerve root is the herniated cervical intervertebral disc syndrome. The lesion is usually at the interspace between the fifth and sixth or sixth and seventh cervical vertebrae. The onset is with pain and stiffness in the neck which disappear and occur with varying frequency. The pain radiates along the mesial border of the scapula and into the shoulder, occasionally into the anterior chest wall, and down the lateral aspect of the arm, and, at times, to the fingers. Numbness and paresthesia in the fingers and hand, and less frequently in the forearm, may be present. The pain is segmental in distribution. The muscles involved correspond to innervation of one nerve root. Compression of C6 causes pain and numbness, primarily in the thumb, and, to a lesser degree, in the index finger. (Fig. 10) The biceps muscle is weak, its reflex is reduced or abolished. Compression of nerve root C7 produces pain and numbness of the index finger and middle finger while the triceps muscle is weak, and its reflex is reduced or abolished.

The radicular pain of a herniated intervertebral disc may be aggravated by coughing and sneezing. Spurling's "neck compres-

sion test," in which the patient's neck is flexed laterally toward the affected side, while pressure is exerted on the forehead from behind, may accentuate the pain. Marked hyper-extension of the neck may be similarly provocative. There may be a

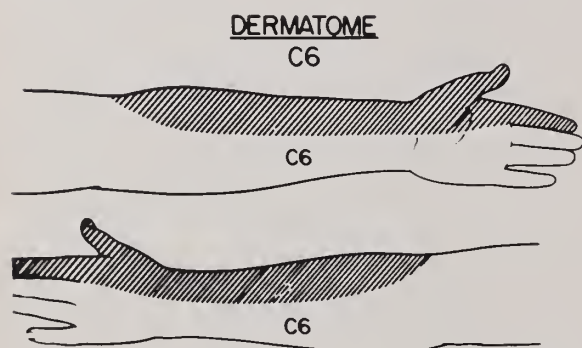


Fig. 10. Distribution of the sensory changes in the intervertebral disc syndrome. Compression at C6.

point of exquisite tenderness over the site of exit of the affected nerve root from the spinal cord. X-ray of the cervical spine may disclose a narrow interspace, or a loss of cervical lordosis. A cervical myelogram may be necessary for definitive diagnosis.

Other Causes of Radicular (Root) Pain

Other causes of upper extremity radicular pain or paresthesia from cervical root irritation include congenital fusion of the cervical vertebrae, old traumatic cervical spinal lesions (fracture, dislocation, and compression fractures); whiplash injuries; osteoarthritis of the cervical spine; metastatic malignancy involving the vertebrae; neurofibroma arising from the spinal nerve root; tumors of the spinal cord or canal.¹⁵

The diagnosis of these lesions requires neurological consultation. The diagnosis is based on the segmental nature of impairment of cutaneous sensations and of motor defects in the muscles supplied by the affected nerve. Radicular pain is worse at night, aggravated by coughing, sneezing or straining, and by motions that stretch the involved nerve roots, such as downward traction of the arms or hyper-extension of the neck.

Acute Spinal Nerve Neuritis of Unknown Etiology

An acute neuritis of unknown etiology, considered by some to be of viral causation, may involve a spinal nerve as it passes through its intervertebral foramen. There is pain referred to the cutaneous distribution of the affected spinal nerve. The 5th cervical nerve is affected more often than any others. The corresponding muscles rapidly become weak and even completely paralyzed, and soon exhibit wasting.

Brachial Plexus Neuritis

Lesions at the brachial plexus level include compression syndrome of the shoulder girdle previously discussed, and damage to the plexus by stab and gunshot wound, by fracture of the clavicle and dislocation of the upper end of the humerus. The plexus may be involved in metastatic neoplastic disease, or be the site of an interstitial neuritis. Clinical manifestations include pain, segmental in distribution, and muscular weakness related to the affected nerve roots.

Idiopathic Acroparesthesia

A benign affliction which appears, as a rule, in middle aged women whose occupation requires weight carrying. There is pain, paresthesia, and a sensation of stiffness in the hands and upper extremities after several hours in the recumbent position. The individual so affected awakens at night with tingling in one or both hands. The sensory phenomenon disappears promptly after the arms are moved about. Evidence of neurologic or vascular disease fails to develop.

Typical of lesions of the cervical nerves peripheral to the brachial plexus are nerve injuries from fractures, lacerations and penetrating wounds and the entrapment neuropathies. Entrapment neuropathy may involve the suprascapular nerve, median nerve, radial nerve and ulnar nerve.¹⁶

The Carpal Tunnel Syndrome

The carpal tunnel syndrome is an entrapment neuropathy involving the median

nerve.¹⁷ It occurs most commonly in middle age women and tends to be bilateral. The main complaint is nocturnal paresthesias in the fingers and hand. Sometimes a numbness is present, more often, a painful tingling or burning in the fingertips. The symptoms are relieved by getting up and walking, and shaking the arms. In the morning, the fingers feel numb and clammy, and for a short period, there is difficulty in handling small objects. There is wasting and weakness of the abductor brevis and opponens pollicis. The disorder is thought to be an ischemic one related to overuse of the wrist and hand. The blood supply to the median nerve is interfered with by compression within the carpal tunnel. A simple diagnostic test consists of immobilizing the wrist in plaster of paris, which invariably relieves the pain.

Peripheral Neuritis

The peripheral neuritis of diabetes mellitus, pernicious anemia, myxedema, alcoholism, B complex deficiency, porphyria only rarely affects the upper extremities, and usually is in association with more advanced disease in the lower limbs. The cause is thought to be endogenous. Distribution of the symptoms does not conform to a peripheral nerve pattern or to a spinal dermatome. There may be bilateral and symmetrical weakness, tingling, burning and numbness of the limbs, muscular pain and tenderness, impaired pin prick, temperature and light touch, loss of position sensation, loss of vibration sense. In severe cases, there is diminution of biceps, triceps, and radio-periosteal reflexes.

Landry-Guillain-Barre Syndrome

This is an idiopathic polyneuritis, also known as infectious polyneuritis or infectious polyneuronitis. The disease usually occurs in healthy young adults, often following a mild infection. There first appear paraesthesias and pains in the extremities. Motor weakness rapidly follows, and may be first manifest in the upper extremities. Fa-

cial paralysis, either unilateral or bilateral may appear at any time. Sensory changes may be present, but are not marked. Tendon reflexes are diminished or absent. Sphincter disturbances occur in severe cases. The pathological process involves principally the peripheral and cranial nerves. The disease is usually self limited, but respiratory paralysis and death may ensue.

Outline of Diagnostic Work-Up Pertinent Questions

1. Trauma, penetrating wound, frost-bite, whiplash injury, excessive use of tobacco, intake of ergot preparations (suppositories for migraine, rye bread, Bellargal, recent unusual arm motion or use).
2. Pain, numbness, paresthesia—distribution.
3. Coldness.
4. Burning pain, cutaneous hypersensitivity.
5. Weakness, arm fatigue—aggravated by overhead activities.
6. Excessive hand perspiration.
7. Swelling, constant or intermittent, previous painful and immobilizing shoulder disorder, joint pains or stiffness, previous episode of axillary pain (effort thrombosis).
8. Digital color changes, bilateral, unilateral, single color change, multiphasic changes, associated digital aching and pain, aggravated by cold, emotional instability, occupational trauma, tightness of skin.
9. Digital ulceration.
10. Symptoms and signs aggravated by overhead hand and arm activities, carrying heavy weights, sleeping with the arm overhead (characteristic of shoulder outlet syndrome).
11. Symptoms and signs, worse at night, aggravated by coughing or straining, by neck movements, by hyperextension of the neck (characteristic of nerve root pains).

The Examination

1. Color changes, coldness, swelling, hyperhidrosis, atrophy, ulceration, gangrene.
2. Joint swelling, tenderness, stiffness, cutaneous sclerosis.
3. Distention of surface veins, venous collateralization at shoulder, venous thrombosis, distended neck veins, facial cyanosis on bending head downward.
4. Axillary lymphadenopathy or mass.
5. Brachial blood pressures.
6. Oscillometric readings.
7. Pulses, radial, ulnar, ante-cubital, axillary, subclavian, carotids.
8. Color on overhead elevation, color on dependency and vein filling time.
9. Allen's radial and ulnar artery patency test.
10. The supra-clavicular space. Tenderness, cervical rib, thrill, abnormal pulsation, subclavian or carotid artery bruit.
11. Tests for the compression syndrome of the shoulder girdle, shoulder squaring, hyperabduction, Allen's and Adson's maneuvers, downward traction on arm.
12. Neurologic examination. Atrophy, muscular weakness, disturbance of sensation, vibratory sensation, reflexes, paravertebral (nerve root) tenderness, neck hyperextension, medial nerve tenderness at wrist.

Special Examinations

X-ray of cervical spine and thorax.
Arteriography.
Venous pressure determinations.
Venography.
Immersion of hand in cold water at 15° C.
Studies for detection of collagenous diseases (scleroderma, lupus erythematosus, rheumatoid arthritis, nodular panniculitis).
Studies for cryoproteinemia.
Neurological consultation.
Orthopedic consultation.

Summary

An unusual number of infrequently encountered disorders must be considered when the patient complains of upper extremity pain, numbness, paresthesia, coldness, weakness, fatigue, sweating, swelling, or manifests digital color changes, pallor, ulceration or gangrene. Considered in the diagnosis must be arterial, venous and neurologic disorders occurring individually or in various combinations. The diagnosis is further confused by the lack of classic symptoms and signs, and the production of similar symptoms and signs by vascular, neurovascular or neurologic diseases.

Arterial insufficiency may be manifested by arm fatigue rather than claudication, and at times may be evidenced only on certain overhead activities. Digital ischemia may reflect a lesion situated anywhere from the arch of the aorta to the digital arteries. Raynaud's phenomenon may represent simple sensitization of the digital arteries to cold or indicate a long list of unrelated diseases.

If pulsations are good and equal in all of the arm arteries, bilaterally, if the brachial blood pressure and oscillometric readings are identical bilaterally, if all the tests for the compression syndrome of the shoulder are negative, proximal organic occlusive disease can usually be excluded.

Neurovascular disorders are sufficiently delineated to permit their ready recognition. There are the typical multi-phasic digital color manifestations of Raynaud's phenomenon, the cyanotic hand coloration of acrocyanosis, the cold, swollen, stiff hand of the hand-arm-shoulder syndrome, the burning pain and cutaneous hypersensitivity of causalgia. The association of digital vasoconstrictor phenomena and vascular and neurologic manifestations suggest the compression syndrome of the shoulder girdle.

Pain and paresthesia from neurologic disease may reflect a lesion at one of three levels, the spinal nerve roots, the brachial plexus, or the nerves peripheral to the brachial plexus. Nerve root pain have four characteristics that facilitate their diagnosis:

(1) The pain is distributed in the segment supplied by a particular nerve. (2) The pain is intensified by coughing, sneezing, or straining. (3) The pain is intensified by movements of the cervical spinal column or downward traction of the arm, i.e., motions that stretch the nerve. (4) The pain is worse at night after several hours in the horizontal position.

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Doctor, Is Your Patient Dangerous?

HOWARD L. COX, M.D.
Hampton, Virginia

Which patient is potentially homicidal? This is a difficult question but this study will help in making an accurate appraisal.

ACCORDING TO FIGURES compiled by Irvine¹ there are probably several hundred people killed in the United States each year by patients who are "obviously mentally ill, but whose illness was not recognized, was not thought to be serious, or was inadequately treated."

Newspaper clippings gathered by Irvine¹ revealed that in a five week period during 1960, and covering only four states, 16 adults and four children were killed while three adults and six children were wounded, some critically. If these results are extrapolated for the whole year and the whole country, the number of people killed by such patients would be "appalling".

What can be done to prevent this wholesale slaughter? Possibly a sharper awareness of the problem by physicians, families and society at large. It is to this aspect of the problem that this article is directed.

In order to be aware of the possibility of any particular patient's committing homicide or of predicting that any one patient may become homicidal, there are many factors which must be considered and evaluated.

These factors are all intertwined so that a simple cause and effect relationship is not always apparent. The factors are multi-dimensional and some are more important than others.

In any case, it seems essential that the following characteristics of the patient be

examined and evaluated: (1) The amount of aggressivity or hostility present. (2) The controls that are present to inhibit, control, or direct the aggressivity whether these controls be cerebral, social, moral, or affective (emotional). (3) The possibility of occurrence of distorted or delusional thinking or confusion of reality and fantasy as might occur in the various psychoses. (4) The state of the patient's affect or emotions and whether these are absent, exaggerated, or inappropriate. (5) The value system of the patient.

In an attempt to illustrate the clinical evaluation of such potential homicidal patients, a number of articles were reviewed.

After perusal of the clinical material reviewed an attempt was made to focus on the most conspicuous and common diagnostic entities in this group of murderous patients. These, together with relevant comments, will be presented immediately below in outline form. Some headings will be included for the sake of completeness even though they contain no persons in this particular series.

I. Organic Brain Disease

A. Chronic Brain Syndrome

1. Non-epileptic Syndromes

(a) Congenital defectives and other congenital lesions:

Steinhilber and Easson² say that homicide committed by these persons reflects immaturity and may occur for trivial reasons. In the Bender³ study seven out of 33 child and juvenile murderers were either borderline or grossly defective. In the Menninger⁴ study two out of four murderers showed evidence of

organic brain damage. In other studies I.Q. ranged from dull normal to superior.

(b) Chronic alcoholism:

Here we should also consider pathological intoxication in which extremely small amounts of alcohol may cause the person to suddenly become very dangerous. According to Mayer-Gross⁵ epileptics and certain types of explosive psychopaths are especially prone to pathological drunkenness. Also according to him intolerance of alcohol and violent behavior under its influence may also be found in persons with old head injuries and other forms of organic brain disease. Persons suffering from alcoholic hallucination and paranoid reactions with delusions of jealousy are likewise dangerous.

(c) Organic psychoses:

According to Easson² when murder is carried out by persons suffering from an organic psychosis the assault is usually precipitated by paranoid fears, misidentifications and delusions.

2. Epileptic Syndromes

(a) Centrencephalic: epilepsy

In the Bender³ group of young murderers there were three known epileptics with a fourth as a possibility, while an additional three boys developed clinical grand mal some months after their fatal assault. In this same group 10 out of 15 boys had abnormal EEG's. Three out of seven in the Easson² study had clinical epilepsy. In the Menninger⁴ study two out of four had abnormal EEG's although no activation procedures were carried out, which might have

shown abnormalities in the others. Mundy-Castle⁶ found an unusually high incidence of abnormal EEG's in murderers who were declared insane or whose crimes were unmotivated.

(b) Psychomotor epilepsy:

In the Menninger⁴ group four out of four gave histories of altered states of consciousness which were frequently associated with outbursts of rage or violence. Three of the five mothers⁷ who committed infanticide had temporal lobe foci of spike activity.

(c) 14 and 6 per second epilepsy:

This is a relatively unknown but apparently common entity first described by Gibbs⁸ and which requires a sleep EEG for diagnosis. In his original report he stated that four out of 427 people with this disorder had committed murder. Schwade and Geiger⁹ have recently reported 14 and 6 per second epilepsy in 73% of 1000 patients who showed repeated attacks of extreme rage and aggressiveness and who at these times committed violent acts which were without motivation. They consider this behavior to be due to lesions in the thalamus or limbic system.

B. Acute Brain Syndrome

1. Delirium

2. Toxic:

This category would include intoxication due to alcohol, other drugs, narcotics, etc. No figures are known and none of the persons in this series were known to have been in this group. It is obvious, however, that an acute brain syndrome combined with

any of the other factors might be a dangerous combination.

II. The Functional Psychoses

A. The Schizophrenias:

1. The childhood type of schizophrenia.

This disease is apparently different from the adult group of schizophrenics in that the sex incidence is conspicuously different and the incidence of brain damage, epilepsy, defectives, and abnormal EEG's is far greater in the childhood type. In the Bender³ group of 33 child and juvenile murderers there were nine who had childhood schizophrenia.

2. The Adult Schizophrenias.

All five of the mothers who killed their children were schizophrenic. Of the Menninger⁴ subjects three out of four under sentence of death showed shallow emotions regarding their own fate and that of their victims. Guilt, remorse, and depression were strikingly absent according to the author. These signs are suggestive of schizophrenia but may be seen in organic psychoses as well. In the Bender³ group in addition to the nine childhood schizophrenics there were three who developed this disease in adult life. In the Easson² study two out of six subjects were psychotic (schizophrenic) at the time of the murder. In the Weiss¹⁰ study all 13 of their subjects were considered to be somewhere on a continuum between schizoid personality on one end and blatant schizophrenia on the other end.

Paranoid schizophrenics are considered to be especially dangerous; however, the behavior of

all types of schizophrenia is notoriously unpredictable and therefore all schizophrenics should be suspect.

B. Affective Disorders

1. Depressive Reactions

According to Easson,² homicide, infanticide and suicide are committed most frequently by the depressed patient. The author recently interviewed a depressed patient who had murdered his wife by severing her head from her body. *Infanticide should always be considered a possibility when a parent, especially the mother, is depressed.* The author recently had a patient who after having surgery for an astrocytoma became depressed and had fantasies of sacrificing his baby daughter as Isaac had done. This man was a minister and had two episodes of depression in years past. (This patient was permanently hospitalized.)

2. Manic reactions

According to Easson² it is unusual for a manic to kill but when they do they are usually also paranoid.

III. Personality Disorders

A. The Schizoid Personality

These people are in many cases more dangerous than those who are obviously psychotic. The diagnosis of this serious disease is probably missed more often than all of the others. This is because they do not have hallucinations and delusions and because they live in the community and carry on their work (often to a surprisingly effective and productive degree.) They are often quite intelligent and educated and present a deceptive surface of rationality and conformity but be-

neath the surface they are profoundly disturbed. They are often considered by doctors and laymen to be "just a little queer" but otherwise normal and harmless.

If all these subjects are lumped together the schizoid personalities and the schizophrenics account for about 70% of the total. (If the various types of organic brain disease—depressives, schizophrenics, and schizoid personalities, and psychopaths are added together they probably constitute 95% of all murderous patients.)

B. Psychopathic Personality

The aggressive, callous psychopath should be permanently *institutionalized*. Cleckly¹¹ has stated that "only a small proportion of typical psychopaths commit murders, but those who have this propensity are *probably the most dangerous and the most ruthless of all killers*." Galbein and Macdonald¹² reported that the man who planted dynamite on an airliner in 1955 and thus killed his mother and 44 others was a typical psychopath.

C. The Dysocial Personality

This is more of a vocation thing than a psychiatric disease.

D. Miscellaneous Diagnostic Types

1. Neurotic

Unless combined with other more serious factors (which may be—and neurosis can be combined with psychosis) these people are not considered to be dangerous.

2. The Unstable Personality

The unstable personality with a history of erratic control or frequent loss of control over aggressive impulses might be pushed to murder under severe stress or if he suffered loss of cerebral

control due to alcohol or other toxins.

IV. Other Miscellaneous Factors Involved in the Evaluation of Patients

A. Family History

It is not enough to merely inquire if there is any family history of nervous or mental disease. If diligently searched for as described by Alvarez¹³ an exceedingly high proportion of the ancestors of these murderers can be shown to be suffering from serious mental disease. In some of the studies which were focused on other areas and factors it is obvious that 80-90% of the parents exhibited unmistakable signs of schizophrenia or other serious mental trouble.

B. Extremely Unfavorable Life Experiences and Home Conditions.

This, of course, may be a sign of disease in the parents rather than a cause of the disease in the children. Duncan¹⁴ was impressed by the history in all of his subjects of remorseless and persistent physical brutality inflicted upon them as children by their parents or parent surrogates. It is quite possible that parents who persistently are remorselessly brutal to children may themselves be schizophrenic—and schizophrenic parents tend to have schizophrenic children.

Easson and Steinhilber² from a study of seven patients concluded that children grow up to be murderers when there has been parental fostering or parental permissiveness of violence. Other studies have shown that delinquent behavior and character disorders in otherwise normal children result from parental inability to set limits, parental permissiveness, inconsistencies, and even covert parental

suggestiveness of such delinquent behavior.

Extreme violence was a prominent pattern of the environment in all persons in the Menninger⁴ study.

C. Sex

Eighty per cent of all persons arrested for murder and non-negligent manslaughter in this country are males. This may be a special case but 100% of the people who committed infanticide⁶ were females (*the child's own mother in all cases.*) However, one case of infanticide in another series was a male.

D. Race

Sixty-one per cent of persons arrested for murder were Negroes. Negroes, however, constitute less than 10% of the population in America.

E. Age

The median age of all of those arrested for murder was between 30-24 years.

V. What Determines Murder and When is it Likely to Occur?

The potentiality for murder exists in many people and the number who have murderous thoughts and fantasies is legion. But how does the thought or fantasy get translated into action. It will ordinarily require one or more of the above factors and anyone fitting into the above diagnostic categories must be viewed as a potential homicidal patient.

Menninger⁴ thought that his subjects carried a surcharge of aggressiveness or else that they had an unstable ego defense system which periodically allowed the naked and archaic expression of this aggression. He further stated that the murderous potential could be activated, especially if some disequilibrium

or state of tension is already present, when the victim-to-be is unconsciously perceived as a key figure in some past traumatic configuration, i.e. the murder represents the re-enactment of some old conflictual pattern or problem.

Weiss¹⁰ found that in some cases an apparently trivial insult was enough to set off a murderous attack in a person who was already tense, frightened, and angry because of something which threatened a tenuous equilibrium in the person's most important relationship (e.g. work, sex, marriage, etc.)

Bender³ stated in summary that for a child to kill requires a certain combination of factors which include (1) a disturbed, poorly controlled, impulsive child, (2) the victim as an irritant, (3) an appropriate weapon corresponding with a lack of protective supervision.

Some, of course, may murder during an ictal or post-ictal state. Others may be the result of distorted thinking resulting from any of the diagnostic categories discussed above.

Still others may be the results of a catathymic crisis, a conception introduced by Maier and further elaborated by Werthan.¹⁵

VI. Prevention

Most of these people are known or treated by general practitioners and specialists other than psychiatrists and the bulk of the responsibility of preventing such tragedies lies on them. It is also quite embarrassingly true that many of these people commit murder while undergoing treatment as an outpatient by a psychiatrist—or they commit murder after being discharged from mental hospitals to be followed as an outpatient while being treated with drugs and psychotherapy. Such cases, of course, represent errors in judgment on the part of the psychia-

trist involved. Psychiatrists are evidently mistakenly relying too much on pharmacotherapy and psychotherapy when actually many of these people should be permanently institutionalized.

What steps can a physician take in preventing the occurrence of such tragedies? The first thing is that he must be aware of the extent and seriousness of the problem. The second step requires that the physician make an accurate diagnosis. In order to do this it seems that the following are necessary:

- A. A detailed medical, family, psychiatric history must be obtained.
- B. A complete physical and neurological examination must be done.
- C. Routine laboratory procedures should be done and x-ray of chest and head done.
- D. An EEG with suitable activation procedures is a must.
- E. Psychological testing is useful in many cases.

It should be added that the expression by a patient of fears that he may lose control and hurt someone should be *taken seriously*. Three out of four of the Menninger⁴ subjects had expressed this fear and it had been ignored.

After the patient has been evaluated and a diagnosis made some disposition must be made and this depends on the clinical judgment of the doctors. Some should be *permanently* incarcerated in high security institutions. Some should be committed permanently to regular mental institutions.

We do not now have any drugs nor do we have any psychotherapeutic techniques which will reliably convert dangerous schizoid and schizophrenic persons into harmless persons. We do, however, have reasonably good treatment for the affective disorders (depressive reaction) and the epileptic disorders.

If it is elected to take a calculated risk and return the patient to this family or community the physician in charge has a duty to inform the family (especially those who live with the patient) of the possibility of violence or murder. The family should further be warned that these patients sometimes react to trivial frustrations with unpredictable behavior.

The family should be warned that the victim is most often a member of the patient's immediate family.

In the Weiss¹⁰ study the victim in five out of 13 cases was the patient's heterosexual partner but in two cases the victim was a stranger. In the Tuteur⁷ study all of the children were murdered by their own mothers.

Family members should be warned that trivial insults or taunts may sometimes set off murderous attacks and that this is most likely to occur when the patient is intoxicated, agitated, tense, frightened, depressed, angry, or disturbed in any way. Signs and symptoms of depression should be discussed with the appropriate family members and it should be emphasized that this is a treacherous disease and that depressives will kill when they seem to be perfectly sane and logical.

And finally, judges, physicians, psychologists, and social workers must realize that at the present time psychotherapy and drugs will not cure the most dangerous types and that many should be permanently institutionalized for the protection of society.

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Adolescence

The word alone sends shivers
up and down the spinal cord
of adult society.
It's a funny time
once gone, forgotten and dead,
alive only to those who are alive in it.
A child begins to grow
and to him
the beginning is the end—
he is grown.
A period of revolution
my ideas are unique
no one before me has had them
no one after me will have them
only myself in adolescence
in revolt
against myself.
A surge of love
the real love
a surge of hate
the real hate

only till tomorrow when a new love and hate
drown out the old.
I see now the beauties
of a pale, white star
of a thunderstorm
of Shelley's moon
of a cigarette and a beer can
and responsibility—
sometimes . . . everything is maybe
in my mixed-up mind
my mixed-up body
my mixed-up parents.
"When will the silly world see life?"
I cry, while crying just tears
over unjust punishment.
Ah, to be young again, the old man says
Ah, to be old and wise, I say
from my experienced cloud
of growing-pains.

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A.P.C.

A Note on Medicine's Share of Civil War Printing

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Three major medical works and a number of minor medical pieces were published in the Confederacy. This constitutes a rather small percentage of the material published during the war years.

THE AMERICAN CIVIL WAR released a vast flood of printing, both in the South and in the North. It is an almost unbelievable fact that more than seven thousand items are known to have been published in Dixie during the war years. And publishing in the North was infinitely greater. How did medicine rate in all this activity?

Out of all those seven thousand items it is surprising to find that the South published fewer than three hundred of medical importance. Of these two hundred and fifty were official government publications, mostly insignificant circulars and forms. Thus there were hardly fifty privately printed medical pieces. In contrast, the private publishers put out over two hundred and fifty works in the *belles lettres* field alone. Furthermore, in the short list of unofficial material really significant medical items were few. Several "foreign" medical books were reprinted for use by Confederate doctors. *A Manual of Military Surgery* by the famous Philadelphia Yankee surgeon, Samuel David Gross, saw two grudging printings in the South. Joseph Marie Goffre's book on bandaging was translated and taken from the French. The important

book by Sir George Macleod on the surgery of war in the Crimea was taken from the British.

With more pride several books by the South's own professors were published. John Julian Chisolm supplied *A Manual of Military Surgery* and Edward Warren *An Epitome of Practical Surgery*. The former was a professor at the Medical College of the State of South Carolina. The latter had been a professor at Maryland until called home to be surgeon general of North Carolina. Apparently Southern enterprise could afford to publish only one other important medical book, Francis Peyre Porcher's *Resources of Southern Fields and Forests*. This was the great labor of love of South Carolina's botanizing physician. Despite the fact that to us much of it seems wasted effort, it nevertheless remains a remarkable book. It is a medical botany of the South, prepared with an eye to substituting roots and leaves found near the camps for unobtainable foreign drugs. Porcher found dogwood bark to be a fair substitute for Peruvian bark, and a decoction of willow bark to be a febrifuge. Just how much practical good this book did is a matter worth investigating.

These books comprise the *total* of major medical works published in the Confederacy. There were several editions of them. The vast text, manual, and monograph production in the North is in striking contrast. Those books are far too numerous to list. A few of the most important have been discussed in a previous paper.

In contrast to this body of major works there is a little-studied mass of medical ephemera which is equally representative of the times. Again, in the Confederacy, ap-

parently little of this, too, was printed. Two only are worth mentioning. One, a short treatise on gun-shot wounds by Moritz Schuppert of New Orleans, was a serious professional paper more or less similar in intent to the many publications of the U.S. Sanitary Commission (see below).

More decidedly ephemeral and certainly more delightful was John Stainback Wilson's pamphlet entitled *The Southern Soldier's Health Guide*, a very simple piece designed for the edification of non-medical soldiers, enlisted men and officers alike. It is very rare today. It is known to me only in microfilm.

Starting with the sober fact that more soldiers then died of disease than by the sword as his premise, the author tried to outline the proper means of preventing such unprofitable deaths. Food was a matter of great concern to him. He was opposed to the great quantities of pickled pork which the Southern soldier received. He decried the dearth of laxative vegetables and fruits which in addition to being laxative were "cooling and anti-inflammatory". It is obvious that he had never been in the army. Laxatives were little needed: diarrhea was almost universal among the soldiers of the 'Sixties.

So far as beverages were concerned, cold water was judged to be the only good one. Wilson was much opposed to alcohol. And he continued, "What can I say of the villainous concoction of logwood, strychnine, sugar of lead, etc. sold by camp followers? . . . simply this . . . those that sell it should be compelled to drink it." Coffee was only slightly more favored than alcohol and the "villainous concoction". How could he know that the soldiers' beloved coffee bean was possibly the most important source of anti-pellagra vitamin that the average soldier received for months at a time?

Other ideas of his show very little understanding of the soldier's life. He emphasized the importance of long hours of undisturbed sleep, the need of moderate daily exercise, and the good effects of "serenity of mind"

(how can a combat soldier have that?). Frequent bathing was prescribed to keep down skin diseases. Furthermore, even the best-shod soldier needed a cold foot-bath every morning. And if the feet were blistered they should be additionally treated with a mixture of hog's lard and chalk. He stressed repeatedly the importance of good shoes and decent clothing. He advocated the use of tents, or even bunking in the open air, rather than keeping soldiers in the barracks where the contiguity of many men predisposed to the spread of "zymotic" diseases. He wisely ridiculed the fear of night air. There was much else that was sensible enough in this treatise which was designed to occupy a corner of a knapsack.

While Wilson and Schuppert stood practically alone as the minor medical writers of the South, the doctors of the North were not so reticent. The Yankee presses poured forth unofficial pamphlets as well as books. The most worthy publisher was the U.S. Sanitary Commission, the distinguished antecedent of the American Red Cross. Disturbed by the fact that many medical officers obviously lacked elementary knowledge, the Commission published at least eighteen separate essays on different diseases and army medical problems. For instance, there was a twenty-five page pamphlet on yellow fever by John Metcalf. J. B. Upham wrote a twenty-seven page essay on the "continued fevers". These were short monographs which gave in considerable detail the most up-to-date knowledge of the day. The yellow fever piece never became very useful since that disease was little seen during the Civil War. We may hope that the tract on the continued fevers which detailed the symptoms and treatment of paratyphoid(?), typhoid, and typhus was useful to doctors jerked out of placid country practices and dropped into the midst of the disease inferno of a nineteenth century army.

The Sanitary Commission also distributed an eight-page piece by G. J. Guthrie which more or less summarized that author's large

and esteemed *Commentaries on the Surgery of War*. Obviously the Commission believed that the doctor in the field was more likely to digest, heed, and even use the slight *Directions to Army Surgeons on the Field of Battle*. The numbered instructions are clear, authoritative, and brief. They may have saved lives. Certainly this tract went through many editions.

Similar in purpose was a booklet, also published by the Commission, entitled *Rules for Preserving the Health of the Soldier* by W. H. Van Buren. It was small enough to fit into the doctor's pocket, was short enough (sixteen pages) to be read while the breakfast coffee was coming to a boil. It was pithy enough to be remembered. By July 12, 1861, it had already gone through four editions. Army surgeons were not too proud to be educated via aphorisms.

All the above trifling guide-books were designed to help the doctor in his new army duties. Dr. William W. Hall (1810-1876), a professional health writer, took a different approach. He wrote and published the counterpart of Wilson's Confederate piece. Since a buddy was likely to be the first to see a soldier's illness, accident or wound, Hall's tract of thirty-two pages, entitled *Soldier Health* (New York, 1862) was designed to help soldiers help each other. Its information was set out in numbered paragraphs rather than in the somewhat more polished essay form of *The Southern Soldier's Health Guide*. The general principles were much the same, however. Hall stressed the importance of sleep, avoiding fatty foods in the summer, washing the feet, and so on. He stressed proper clothing. In this connection he remarked that experience proved that soldiers dressed in red (he probably had in mind the various "Zouave" regiments) were about twice as likely to be wounded as those in blue-gray. Unlike Wilson, Hall quite approved of coffee. He was also a little more lenient toward the use of alcohol. He was strikingly modern in his insistence upon the importance of drinking boiled water. When he

finally gave out of ideas he thickened his booklet by copying verbatim the Guthrie instructions which had already been published by the U.S. Sanitary Commission.

Just how much good these little tracts did is debatable. They were certainly distributed by the tens of thousands. Probably, if a doctor needed the instructions in the simple treatises designed for his use, he was not competent to use them anyway. How long the soldiers carried in their knapsacks the self-help papers probably given them by anxious mothers is an amusing question. Judging from the memoirs, most of the boys ignored all the rules, or, all the boys ignored most of the rules.

Useful then or not, the war-born medical literature makes a poignant exhibit today. The sizeable books of Warren and Chisolm and Porcher were designed to show that the South had its own respectable medical experts. Also, Porcher's unique volume carries us back to a desperate day when the search for ersatz materials seemed essential to national survival. These Confederate books were more poorly printed on a poorer grade of paper than the Yankee ones. Their bindings have quickly assumed the appearance of age and certainly do not glitter on the shelves. But a glow does remain with these books, the glow of the pride of a new nation, the glow of stirring times, the glow of having been printed under stress to meet a great need. And the little Confederate and Union tracts and short monographs are almost pathetic mementoes of, to us, a medically dark era.

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Treatment of Diabetes

The American Diabetes Association hopes that the following statement will be disseminated widely so that more adequate education of patients with diabetes mellitus will be achieved, and the ultimate treatment of these patients will thereby be improved. This statement reads:

Because of its prevalence and chronicity, diabetes mellitus should be the continuing concern of all physicians, regardless of their types of practice. An essential part of treating the condition is teaching the patient how to live with it.

As in any educational program, a systematic approach should be used. Each physician should have certain specific objectives clearly in mind as he teaches his diabetic patients.

To aid him, the American Diabetes Association has prepared the following check list

of 9 elements of treatment, which constitutes a *minimum* program for diabetes management:

1. Diet
2. Urine testing
3. Action of insulin and other hypoglycemic agents
4. Technique of insulin injection and sites for it
5. Care of syringe and of insulin
6. Symptoms of hypoglycemia
7. Symptoms of uncontrolled diabetes
8. Care of the feet
9. What to do in case of acute complications

This guide is not only of value in the initial education of a new diabetic, but can also be most helpful to both patient and physician in the subsequent years of management.

Correspondence

Uhuru!

TO THE EDITOR:

Swahili is the lingua franca of Eastern and Central Africa. *Uburu* (meaning freedom) is a Swahili word borrowed, I believe, from one of the Semitic tongues. It is the title of a novel about Africa by Robert Ruark. The scene is laid in Kenya and the action starts in August 1960. (I had left Kenya a few days earlier, after spending considerable time there and in other parts of East, Central and South Africa.) While the book is written in novel form, it is factual and actually tells of the things that were going on in Africa at that time. Some of the names of the characters have been changed for obvious reasons. Names of world-wide-known people have not been changed.

Very few people know what is actually going on in Africa today. Everyone should know. In the first place, it might be mentioned that when the Dutch and British settled in South Africa, there was not a black African within a thousand miles of the Cape of Good Hope. South Africa is in the South Temperate Zone and is too cold in the winter time for naked savages. The black Africans lived only along the tropical coastal fringes where they could live off tropical fruits, wild game, and, when other food was scarce, saw no reason why they should not kill and eat each other, which they did. (Cannibalism is still going on in Africa.) Neither did they live in the central plateau of Africa, which is from three to seven thousand feet above the sea level, and therefore also has a mild climate, really cold at night—also not suited for people who wear only a loin cloth.

I was in the Congo when all the trouble started there and got out as fast as I could. The word freedom, ("*l'indépendance*" in the Congo) meant nothing to them. One black houseboy told his mistress that when *l'indépendance* came, she would be working for

him. When Independence Day did arrive, before all the trouble started, natives were remarking that they hadn't gotten their independence yet and were inquiring as to how it would come—by mail, parcel post, express, or just descend on them like manna from heaven.

At the turn of the century there was practically no cultivated land in Kenya. The land is not amenable to cultivation and requires a lot of doctoring with fertilizers of various sorts. However, when I was there in 1960, the British had put 11 million acres of land under cultivation and owned only 20 per cent of that land themselves, allowing the natives to own and work the other 80 per cent. It is striking, though, that 80 per cent of the crops were produced on the 20 per cent of the land which the British owned and worked, and only 20 per cent on the 80 per cent of the land which the natives owned.

There are people of British extraction in Kenya who have been there for four generations. It is their home. They know no other home. When I was there, they were, of course, appalled at the agitation about *uburu*. They had developed farms. They had bought property. They had expended backbreaking labor to establish homes and to have a stake in the country. There was no sale for their property even then, and they felt that it would be completely worthless, or else taken away from them, when Kenya got its freedom. One doctor told me that his black houseboy had said to him "When I get my freedom, I am going to take your car and drive wherever I want to drive on whichever side of the road I want to drive on." That so far as I could ascertain was their only idea of *uburu*. It simply meant license, pillage, stealing, confiscation of other people's property, freedom to do as they pleased in every non-productive way imaginable. They hadn't the foggiest notion of freedom as we understand it—freedom to live unhampered,

productive lives with safeguards to life and property.

I made surgical ward rounds with the British Chief of Surgery in the 1,000-bed King George V Hospital in Nairobi. This was built by the British for the natives. With us, besides the rest of his staff, the Chief of Surgery had his black Registrar (trained by the British). We came to a fracture case and the Chief asked the Registrar if the fragments were in good apposition. He glibly answered, "Oh yes." The chief then asked for the x-ray pictures. The fragments were in marked malposition and the patient would have been a hopeless cripple if the error had not been caught. When we got through the ward rounds, the Chief said to me, "You know time is the most precious thing in the world. It will take a lot of time to get these people ready for self government." I replied, "Yes, two or three million years of evolution". He said, "Thank you for understanding our problem". I told him that I understood it so well, that we had the same problem in Baltimore. He then told me that most of the natives were only interested in medicine as a stepping stone to politics, and politics to them means *uburu*.

Why are these European settlers to be left at the mercy of an overwhelming majority of blacks, most of whom are still savages? Many of the educated ones got their educational start from mission schools, others from British public schools. All of their higher education has been furnished by the British. Their education has not given them the Anglo-Saxon notion of justice. It has given them the ambition to exploit, for their own benefit, both their own race and the Europeans who have developed the country.

Why has the mother country left them in such a fix? Downing Street, in making its decision for freedom, had spoken of "the winds of change". Just a few years ago the Mau Mau were killing European men, women, and children in wholesale lots. Now Whitehall and Downing Street, egged on by the bleeding hearts in London, are to leave these same Europeans at the mercy of the

same people who were killing them wholesale just a few years ago, and who have said that they will do it again if necessary, and also confiscate the property of the people who made the country.

The slogan "Africa for the Africans" is just as silly as a similar slogan "America for the American Indians" would be. The land was never theirs. They simply wandered over it and exploited it, taking whatever was offered and giving nothing in return. Is anybody, except a few mushheads, sorry that we took the North American Continent away from the Indians? The mushheads and bleeding hearts were not in the majority at the time of our struggle with the Indians. Had they been, the same thing would have happened to the Europeans here that is bound to happen to them in Kenya and other African countries who are given *uburu*. Our ancestors were made of tough stuff. So were the Britishers who founded Kenya. The difference is, that in the time that our ancestors were early settlers, the British Government backed them up. That, the British Government today is not doing. What has happened to the white man? Has he become soft? Let no one believe that the law of tooth and claw has become extinct? It has only been camouflaged by donning the cloak of pretentious social conscience. It is just as prevalent as it ever was and the bite of the tooth and the scratch of the claw are just as potent, even though teeth and claws are now very often carefully hidden and only the effects are seen. No society is worth living in in which there is not a struggle for existence, natural selection, and a survival of the fittest. Any other society is bound sooner or later to become effeminate and its government to deteriorate.

Of course, there are many notable exceptions but one wonders, if, on the whole, the black race understands kindness and gratitude. Whatever advances they have made in East Africa and South Africa have been due to the British. Are they willing to repay that with a gradual evolution into decency? They have demonstrated that they are not.

They do not want their freedom when they are ready for it, but *right now*. Neither have they shown a willingness to show justice to the British settlers when they get their freedom. The Mau Mau took repugnant oaths with either human or animal sacrifice. The oath taking ceremonies involved sexual orgies and horrible cruelties. Animals were often involved in the sexual orgies. Animals were disemboweled alive, and often had every bone in their bodies broken while they were still alive. The brains of children (preferably white children) were eaten raw. Men (preferably white men) were not infrequently buried alive, after having had their bones brutally broken. There was also the drinking of a mixture of blood, human semen, and the stomach contents of animals—as a part of the oath-taking. They vowed to kill when ordered to, and were told that their oath would destroy them if they refused to kill. Superstition and witchcraft played an enormous part in making the oaths binding. Instances are known in which natives committed suicide in order to escape from the frightful obligations incurred by their oaths, which were frequently made under duress. This whole frightful business, at the time I was there, had recently been revived to a certain extent.

In our own country we have a similar, but not so extreme a condition. That there is an essential difference between the black man and the white man (besides the color of their skins), no one in his senses will deny. They have had equal opportunities to develop since man emerged from the trees and the caves, but the black race has done nothing to develop itself except when cajoled into doing it by the white man. The bleeding hearts and the political opportunists to

the contrary notwithstanding, we have done amazing things for the black race in this country and we have given them large opportunities. Do they appreciate it? No. They are repaying us by trying to destroy our social structure by moving into white neighborhoods, and by trying to force themselves into white schools. Of course, this is all due to a colossal inferiority complex. They are not proud of being black. They want to be white. No one has anything against them on account of the color of their skin. All the prejudice against them is because of their actions, and not their complexion. If they acted like white people, they would be treated like white people. This they consistently refuse to do. If they were willing to prove themselves, they would be accepted without question. That, however, takes a little doing, and they are not up to it. The advantages they have received in this country are entirely out of proportion to the amount of taxes they pay.

Of course, one of the difficulties both in this country and in Africa is that a lot of theoretical idealists among the whites, who really know nothing of the black race, are aiding and abetting them in their nonsense. The political opportunists are making the most of the situation. One is reminded of what Carlyle once said—there are a billion people in the world, mostly fools. The only difference between Carlyle's day and ours is that there are now almost three billion people in the world! Anyone who really wants to understand the African question, and its application to our own problems, should go to Africa as I did, or barring that, at least read Robert Ruark's book "*Uburnu*".

AMOS R. KOONTZ, M.D.

1014 St. Paul Street
Baltimore 2, Maryland

Medical Applications of Refractometric Analysis of Liquids

The recent development of a pocket-size, temperature-compensated refractometer has made available an extremely rapid and simple method for certain analyses of body fluids. Refractometry has in the past required elaborate and expensive equipment, rigid temperature control or compensation, reference standards and large samples. This new instrument eliminates all these factors from consideration.

The instrument is very nearly an ideal machine. There are no critical moving parts and it should last indefinitely. The entire process of loading the chamber, taking a reading, interpolating and recording the required data, and cleaning the chamber in preparation for the next sample requires less than 30 seconds. These features, in addition to compactness of the device, make the refractometer as useful in physicians' offices as it is in the hospital laboratory.

Only a few drops of fluid are needed to fill the refractometer chamber and visual

readings of refractive index may be taken immediately since temperature equilibrium occurs almost instantaneously between the liquid and the instrument. Refractive index is a colligative property of a liquid and conversion tables are available for the translation of refractive index to useful clinical units.

The office determination of serum total protein concentration can be used to follow the progress of patients with hypoalbuminemia, multiple myeloma, macroglobulinemia, etc. It is also useful as an adjunct to the determination of serum calcium levels. The determination of urine specific gravity should be of considerable value in pediatric practice in which the volume of many urine specimens is too small to permit the use of a urinometer. Urine samples from ureteral catheters or from persons with oliguria may also require this method of analysis. The refractometer may be used to check the purity and concentration of aqueous solutions such as distilled water, solutions for intravenous use and irrigating solutions.

H. R. BATES, M.D.

Leg Swelling

Infections and cancer were the most common causes of leg swelling due to excessive lymph fluid when a lymphatic abnormality was not responsible, a Mayo Clinic study has indicated. Primary lymphedema, leg swelling due to an abnormality of the lymphatic system, affects women predominantly and begins almost always before the age of 40, Drs. Richard D. Smith, John A. Spittell Jr. and Alexander Schirger, Rochester, Minn., wrote in the July 13th *Journal of the American Medical Association*.

However, a study of 40 men and 40 women showed that secondary lymphedema,

leg swelling due to some extralymphatic process, affects men and women equally and usually begins after the age of 40. In 43 of the 80 patients, secondary lymphedema was the result of infections and women outnumbered men almost 2 to 1. In 35 of the 80 patients, cancer or related malignant diseases was the underlying cause and men outnumbered women almost 2 to 1.

Since surgery and radiation are possible causes of leg swelling, the patients selected for study had not undergone such treatment. Therefore, no women with cancer of the cervix were included in the study.

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

TB or Not TB

This is a question of mounting concern to physicians who specialize in the diagnosis and treatment of pulmonary disease.

Today there is a new group of disease entities caused by acid fast mycobacteria which is wholly indistinguishable clinically, pathologically, and by x-ray from tuberculosis.

These mycobacteria are composed of many strains which vary markedly among themselves. These differences relate to culture characteristics, including pigmentation, and rapidity of growth (even at room temperature); mode of transmission of infection; and absence of pathogenicity for guinea pigs. This latter feature probably delayed for years their acceptance as pathogenic for man.

However, repeated isolation of these mycobacteria in chest disease, from sputum, and diseased tissue, in the absence of any other recognizable etiological agent, leaves little doubt that some of these strains do cause pulmonary disease indistinguishable otherwise from tuberculosis.

Runyon classified these mycobacteria into four groups (Med. Clin. of North American 43:273, 1959) on the basis of pigment production and rapidity of growth. Each of these contain acid-fast mycobacteria capable of causing tuberculosis-like lesions in man.

Group I Photochromogens (*M. kansasii*)

Young, actively growing cultures produce lemon yellow pigment after short exposure to light.

Appearance of growth 1-3 weeks.

Group II Scotochromogens

Pigment production not affected by light. Ranges from yellow-orange to brick red.

Appearance of growth 1-3 weeks.

Group III Non-photochromogens (includes Battey bacillus)

Pigment variable. Usually non-chromogenic on primary isolation. Pigment may be acquired after prolonged incubation; however, if present the pigment is not affected by light.

Appearance of growth 1-3 weeks.

Group IV Rapid Growers

Grow well within 1-3 days from minimal inocula, even at room temperature.

Each group contains several to many strains. In Group I, the strain most frequently implicated in disease, has recently been assigned a species name, *M. kansasii*. The best known strain in Group III pathogenic for man is the Battey bacillus. Otherwise the strains remain for the most part *unclassified* and are generally referred to as such, although the term "anonymous" is preferred by some. Since they are not tubercle bacilli in any sense of the word, they should not be labelled "atypical tubercle bacilli".

Disease caused by the photochromogen is pretty widely scattered in this country with greatest prevalence perhaps in the Midwest. The Battey strain is responsible for widespread infection, associated with sporadic disease, in the extreme Southeast (Georgia and Florida), but is found throughout the southern states, less frequently elsewhere.

The scotochromogens consist of numerous strains, but few well-documented cases of tuberculosis-like disease have been accepted as caused by members of this group, as the sole etiological agent in a previously healthy subject.

Group IV includes many strains just enough of which have been implicated in clinical disease, to justify tentatively setting

them up as a separate group of acid fast mycobacteria pathogenic for man.

The first problem in relation to the anonymous mycobacteria is to identify the group to which it belongs. This is a relatively simple matter for any laboratory equipped to do tuberculosis culture work. A number of biochemical, and other laboratory tests are available in addition to pigment production and rapidity of growth to assist in distinguishing the anonymous mycobacteria from each other, and from the tubercle bacillus (Niacin tests, neutral red test, etc.).

Because of ever-present, closely related, saprophytes, in nature and in the laboratory, even greater care must be taken in collection, transportation and handling of specimens. A glass container with a screwtop is a must for collection and transportation.

After the culture has been identified in the laboratory, it is, of course, up to the clinician to relate this finding to his diagnostic problem.

In general these mycobacteria are more uniformly resistant, initially, to the usual antituberculosis drugs than are true tubercle bacilli, and, of course, their response to chemotherapy is correspondingly more erratic.

All patients with active clinical disease should be treated or continued on anti-tuberculosis drugs, for many do respond—and progression does take place more often in the absence of therapy than otherwise.

The age of the patient, the presence of other intercurrent disease, will preclude surgery in some, but where the condition is localized, the sputum is positive and cavity persists, surgery is now generally indicated. Post-operative complications, particularly bronchopleural fistula, have not been reported frequently in clinics where care is taken first to exclude associated bronchial disease.

Public Health Aspects

Infection

Particularly in the southeastern part of the United States, including Virginia, allow-

ance must be made for tuberculin reactions caused by the anonymous acid fast mycobacteria. A majority of these reactions are caused by the Battey bacillus in Georgia and Florida. However, most of the reactions caused by these organisms are low grade even when tested with the homologous tuberculin. With intradermal PPD-S tuberculin (prepared from the true T.B.) most reactions are under 10mm in diameter.

It is recommended, therefore, that the intradermal technique (PPD or O.T.) be used exclusively for the final report of a tuberculin test status; use of this technique makes possible an accurate measurement of the intensity of reaction—upon which the interpretation or significance of the test depends.

Classification of reactors has been altered accordingly:

0—4mm = negative

5—9mm = doubtful

10+ mm = positive

Although some tuberculous infection and disease will be found among the doubtful group, most reactions caused by mycobacteria other than tubercle bacillus will be screened out in this way.

A 10mm+ reaction is regarded as indicating the presence of true tuberculous infection or disease and full-scale investigation is invariably indicated without fail.

In the absence of proof of the presence of active tuberculous infection or disease, those with 10mm+ will be separately filed in local health departments as one group of persons at higher risk than the general population, of developing active tuberculosis. They will be followed indefinitely through periodic examination by tuberculin test and by x-ray on a schedule to be published later.

*Quarantine**

Patients, even though shedding anonymous mycobacteria, are naturally not sub-

* It is still unknown how these infections are contracted.

ject to the quarantine law for tuberculosis. If the clinical condition warrants, they need not be denied schooling or employment.

However, any patient initially discovered to be shedding acid-fast mycobacteria should be regarded as shedding true tubercle bacilli, until the identity of the mycobacterium has been definitely established as one of the anonymous group. This is because in 90-98% of cases the offending organism will be found to be the tubercle bacillus.

Reporting

All cases of disease caused by anonymous mycobacteria should be reported to the health department. They will be kept in a separate register. They should not be labelled as having tuberculosis.

Hospitalization

Patients are acceptable to State Sanatoria for diagnosis, clinical evaluation and treat-

ment, including surgery, according to a recent ruling by the State Board of Health. Once identified as having tuberculosis-like disease caused by a member of the anonymous group of mycobacteria, either prior to or after admission, these patients will be isolated from those having true tuberculosis, unless, a mixed infection is already present.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE DISEASE CONTROL

	June 1963	June 1962	Jan.- June 1963	Jan.- June 1962
Brucellosis	3	4	3	8
Diphtheria	0	2	0	6
Hepatitis	56	90	544	804
Measles	1193	1159	7518	8778
Meningococcal Infections ...	12	11	63	34
Aseptic Meningitis	4	4	15	11
Poliomyelitis	1	0	2	0
Rabies (In Animals)	14	9	120	80
Rocky Mt. Spotted Fever ...	6	10	10	13
Streptococcal Infections ...	634	468	6092	4779
Tularemia	0	2	5	8
Typhoid Fever	1	2	5	9

Heart Pacemakers

A frequency control for implanted heart pacemakers, which can be used to accelerate the heartbeat under stress conditions, has been tested in two patients. The external control is a further refinement of the internally implanted pacemaker which electrically stimulates the heartbeat at a constant rate. Pacemakers have been used successfully in patients with heart block.

The frequency control includes an induction coil and power supply. When the coil is placed on the surface of the skin overlying the implanted pacemaker, the heartbeat can be adjusted from 64 to about 126 beats per minute.

Data obtained from studies of two patients indicated that when they were at rest and at a minimum level of activity, the

constant rate pacemaker at 60 to 64 beats per minute was satisfactory. However, a small increase in cardiac output (total blood pumped by the heart), which can be created with the frequency control, may be advantageous as the level of activity increases to a point where the amount of oxygen consumed by the patient is several times the amount needed when he is at rest.

An increase in heart rate may also be indicated during other types of stress which impose a further demand on the circulation, such as periods of fever or serious bleeding.

The study was reported by Drs. George J. Haupt, Richard N. Myers, James W. Daly and Newton C. Birkhead, Lankenau Hospital, Philadelphia.

WILLIAM J. EICHMAN, Ph.D.

Psychological Aspects of Aging (part II)

Having set forth my personal and professional views on this subject in the June issue of *Virginia Medical Monthly*, the remainder of this paper is concerned with the recent literature on aging, particularly in respect to intellectual factors. This is not to infer that intellectual factors are the most important areas of research but merely that these are the best studied at the present time. The typical intelligence curve shows gains in score from childhood to late adolescence or early adulthood. Nearly all curves show decline from that point on and one gets the impression that nothing is gained from experience in adulthood or that the losses overcome whatever gains are made. This result is not entirely in accord with practical experience where many people do not reach maximum effectiveness until their middle years. In the sciences and professions, the obligatory training period extends beyond the age of peak intelligence according to these curves. Thus we expect our scientific advances to be made by people whose intelligence is already declining. Many psychologists have questioned the validity of the "intelligence" tests because of these results. Perhaps it is necessary to go a step backwards in time and note the fact that early intelligence tests used achievement in school as a criterion. Thus, the types of items chosen for inclusion in the test were those which correlated with scholastic success. Later tests were developed against the criteria of results with the earlier tests. Obviously, the tests are biased in favor of the young and possibly in favor of those who have had more recent

scholastic experience. The more subtle aspects of intelligence that contribute to vocational success have been largely ignored, not because they were unrecognized but because they were difficult to evaluate. Thus we can legitimately question this early part of the age curve.

In regard to the remainder of the curve, we find steady decline of intellectual function with aging. This tends to be gradual with the verbal abilities and more precipitous with performance abilities. The latter result is compounded since most performance tests have stringent time limits and/or time bonuses. We do know that psychomotor speed declines rapidly with age and that the adolescent is most quick in reacting to a particular stimulus.

What are the implications of these results in practical terms? If we are faced with the decision of choosing between a 30 year old and a 50 year old for a particular job, how much can we base our decision on age alone? If the job is one that calls for speed alone, we should choose the younger man. However, as experience and judgment become more important in the job, we should be increasingly dubious about the importance of age as a selector. Even where a clear difference is demonstrated between age groups on a particular behavior, it is wise to be cautious. Standardization data with the Wechsler Adult Intelligence Scale can serve as an example. Here we find little decline of verbal abilities with age but a considerable decline in performance abilities, a result similar to that with most tests. However, even with the Performance Scale which probably maximizes differences, we find overlapping distributions. The average 22 year old has a scale score of 50 while the average 50 year old has a score of 41. This is a clearly significant difference but it does not mean that all 22 year olds exceed all 50 year olds in

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their performance abilities. These are merely averages. Actually 10% of the 50 year old group exceeds the average 22 year old. If selection is made on age alone, the wrong guess would be made rather frequently. An average score has been made rather sacred in our society and frequently we think of this "average" person or stereotype instead of the distribution of people around any average. Especially hurt in the use of the stereotype is the person at the extreme end of a distribution, the one who is far above average or far below.

The data presented by Wechsler are "cross sectional", i.e., the people included in each age group are different people. "Longitudinal" data would be those in which the same people were followed throughout their life span and tested at various times. Obviously it is easy to gather groups of people of different ages and it is difficult to follow any group of people through their life. As a consequence, longitudinal studies have been infrequent. Owens reported one such study a few years ago. This involved a retesting of Ohio State graduates who had been tested during World War I with the Army Alpha Test. Surprisingly these data did not show the decline of function which would be expected over a 35 year interval. Instead, the majority of men showed an increase of score. Other studies followed this promising lead with a majority finding similar results—no conspicuous decline of function with aging (Bayley). Thus we are faced with conflicting results. The cross sectional studies show considerable decline of behavior but the longitudinal studies show little or no change of intelligence with age. How are we to explain this finding? The longitudinal studies are probably closer to the truth in regard to an individual's future prospects. We, as individuals, can take comfort that we are not declining in intellect throughout the middle years of life at least. On the other hand, the 50 or 60 year old person of today does compare unfavorably with the younger group. The basic reason for this, however, is not age itself but the increased education and richer

environment that the younger person has available to him.

Dr. Birren at the National Institutes of Health reports a statistical study of intellectual function on the Wechsler subtests in respect to age and education. The analysis of data permits an estimate of the percentage of the results which are connected with a particular variable. One factor which emerged from the analysis could be called an aging factor; it accounted for 11% of the variance. The other three factors found were more closely connected with education and accounted for more than 60% of the variance. Thus, in this study, performance on an intellectual task was much more highly related to education than to age. In most studies, the two are closely connected in that older subjects usually have lower education, thus confusing the results.

Further studies that are worthy of note include the following. Wagner reports an extensive psychological examination of young and old executives in which intelligence, aptitudes, interests, and personality were measured. The only obvious difference found was in the pattern of interests. A research on production workers in relation to age was reported by Breen and Spaeth. In this instance, the jobs involved manual labor; production bonuses were given. Older and younger men working at identical jobs in four different companies were studied. No differences in productivity were found. Thus in two practical business situations, we do not find the older worker doing at all badly.

The results given above are in clear opposition to the commonly held attitude that the older person is not capable. At the very least, we can say that many older people are equal to or superior to their younger counterparts. The setting of arbitrary age limits in terms of employment, promotion, retirement, etc., is clearly illogical as management policy. At best, it produces short term gains in getting slightly more efficient personnel at the present time. However, the policy perpetuates a cruel hoax that older people are incapable and this belief will interfere with the func-

tioning of all workers, since all must become "old" as time progresses.

As indicated above, when we report research results we are talking about groups of people and about averages. This is simple and it appeals to the policy maker in large organizations. Yet it leads to an incredible waste of manpower. We could well go back to the "psychology of individual differences" and face the fact that individual appraisal of abilities is necessary for adequate selection, regardless of the type of selection required.

Congruent with individual approaches is a recent theory put forth by Henry and Cummings. This is called the theory of "disengagement" and is based on a study of normal elderly people. It holds that older people tend to gradually withdraw from various activities and relationships, either because these lose interest to the person himself or because of frustrations involved in the pursuit of the goal. Since the older person reduces the number of goals that he pursues, he can continue the remainder with equal effectiveness. In the healthy elderly studied, there was no large degree of frustration or dissatisfaction with their lives. There was little of the youth orientation that we might expect. The observation of this process in a number of happy, older people is in direct contradiction to the so-called "activity" theory of aging. This latter theory holds that the older person should hold on to the attitudes and activities of middle age as long as possible and then find substitutes as old age interferes. The "activity" approach suggests a frantic attempt to fight off the inevitable and a rather grotesque caricature of youth in most instances. The older person with declining physical abilities is almost

certain to do many things poorly under these circumstances as opposed to doing fewer things but doing them well.

In summary, we might say that a new era is beginning in regard to our understanding of the aging process. Many things we believe to exist probably do not, at least in the form we expect. Many features of aging that we regard as inevitable are probably a function of existing conditions and can probably be modified. The process of aging is a normal one and is inevitable in its outcome but it can be dealt with objectively and it can be accepted as a part of the life process itself.

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Cancer Trends

American Cancer Society.

The 1963 Scientific Session Program will be held at the Biltmore Hotel, New York City, October 21-22. This program is open

to all members of the medical and dental professions and students. There is no advance registration or registration fee.

The following is the program for this session:

CONFERENCE ON UNUSUAL FORMS AND ASPECTS OF CANCER IN MAN

Monday, October 21, 1963

Chairman—Dr. George T. Pack

The Natural History of Untreated Cancer

Spontaneous Regression of Cancer—Dr. Tilden C. Everson, University of Illinois, Chicago.

Clinical Aspects of Immunity in Untreated Cancer—Dr. James T. Grace, Jr., Roswell Park Memorial Institute, Buffalo, New York.

The Natural History of Untreated Breast Cancer—Dr. H. J. G. Bloom, The Royal Marsden Hospital, London, England.

The Natural History of Untreated Lung Cancer—Dr. Leo G. Rigler, Cedars of Lebanon Hospital, Los Angeles, California.

Specific Unusual Neoplasms

A Study of Cystosarcoma Phylloides—Dr. Norman Treves, New York, New York.

Carcinoma of the Male Breast—Dr. N. Henry Moss, Temple University, Philadelphia, Pennsylvania.

Sacrococcygeal Teratoma—Dr. Robert C. Hickey, M. D. Anderson Hospital & Tumor Institute, Houston, Texas.

Afternoon Session

Chairman—Dr. Murray M. Copeland

Cancer at the Extreme Ages of Life

Cancer in Infancy and Childhood—Dr. Harold W. Dargeon, Memorial Sloan-Kettering Cancer Center, New York, New York.

Cancer in the Very Aged—Dr. Sidney Cutler, National Cancer Institute, Bethesda, Maryland.

Occult Carcinoma

Detection and Results of Treatment of Occult Breast Cancer—Dr. J. Gershon-Cohen, Albert Einstein Medical Center, Philadelphia, Pennsylvania.

Present Status of Mammography—Dr. Robert L. Egan, Methodist Hospital, Indianapolis, Indiana.

Histopathological Aspects of Occult Cancer of the Lung—Dr. Oscar Auerbach, Veterans Administration Hospital, East Orange, New Jersey.

Treatment of Occult Cancer of the Lung—Dr. Richard Overholt, Overholt Thoracic Clinic, Boston, Mass.

Specific Unusual Neoplasms

Management of Retinoblastoma—Dr. Algernon B. Reese, New York, N. Y.

The Treatment of Retinoblastoma by Irradiation and Intra-arterial Triethylene Melamine—Dr. Edward T. Kremenz, Tulane University, New Orleans, Louisiana.

Management of Malignant Tumors of the Scalp—Dr. John J. Conley, Pack Medical Group, New York, N. Y.

Evening Session

Chairman—Dr. Shields Warren

Radiation Induced Cancer

The Biology of Radiation Induced Cancer—Dr. J. F. Loutit, Harwell, Didcot, Berks, England.

Late Effects of Radiation in Relation to Cancer in Japan—Dr. Murray Angervine, Atomic Bomb Casualty Commission, San Francisco, California.

The Cancer Hazards of Industrial and Accidental Exposure to Radioactive Isotopes—Dr. Robert J. Hasterlik, The University of Chicago, Chicago, Illinois.

Radiation Induced Thyroid Carcinoma—Dr. James W. Pifher, The University of Rochester, Rochester, N. Y.

Radiation Induced Cancer of the Skin—Dr. James Barrett Brown, St. Louis, Mo.

Tuesday, October 22, 1963

Chairman—Dr. Howard C. Taylor

Cancer and Pregnancy

Management of Patients with Carcinoma of the Breast in Pregnancy—Dr. George Rosemond, Temple University, Philadelphia, Pennsylvania.

Management of Pregnant Patients with Leukemia—Dr. William Dameshek, Pratt Clinic, Boston, Massachusetts.

Management of Invasive Carcinoma of the Cervix in Pregnancy—Dr. Joseph H. Pratt, Mayo Clinic, Rochester, Minnesota.

Experience with Choriocarcinoma in the Philippines—Dr. C. P. Manahan, Manila Doctors Hospital, Manila.

Management and Prognosis of Chorio-

carcinoma—Dr. Roy Hertz, National Cancer Institute, Bethesda, Md.

Specific Unusual Neoplasms

Unusual Tumors of the Stomach—Dr. George T. Pack, Memorial Hospital for Cancer and Allied Diseases, New York, New York.

Clinical Management of Cancer of the Vagina—Dr. Frank R. Smith, New York, New York.

End Results of Treatment of Cancer of the Vagina—Dr. Howard B. Latourette, State University of Iowa, Iowa City, Iowa.

Afternoon Session

Multiple Primary Cancers

Incidence and Significance of Multiple Primary Cancers—Dr. Charles G. Moertel, Mayo Clinic, Rochester, Minnesota.

End Results of Treatment of Multiple Primary Cancers—Dr. Walter L. Mersheimer, New York Medical College, New York, New York.

Site Specific Neoplasms

Primary Cancer of the Liver—Dr. Carroll M. Leevy, Seton Hall College of Medicine and Dentistry, Jersey City, New Jersey.

Pathological Aspects of Soft Part Sarcomas—Dr. Arthur Purdy Stout, Columbia University, New York, New York.

Clinical Management of Soft Part Sarcomas—Dr. Lemuel Bowden, New York, New York.

Rare Tumors of the Pharynx and Oesophagus—Dr. Ronald W. Raven, London, England.

Egalitarianism and Population Explosion

EVERY ADDITIONAL HUMAN BEING means a little less freedom for everyone. This must have been the genesis of Law; everyone's rights in time had to be defined. The more people, the more laws, the less freedom. Every time you stop for a traffic light (and who hasn't been struck by their recent proliferation), you are hearing an early sound-wave, however small, from that fearful explosion of population that bids fair to belittle even the ferocity of the explosion of the atom.

Although the geopolitical and economic implications dominate any discussion of the problem of population explosion, some more subtle ones, which might be grouped together as the egalitarian ones, come to mind.

The primeval relation of man to man when he existed in small numbers was leader to follower. The leader had those qualities of muscle, heart, and mind to acquire and hold his position. With more people the direct interplay of these qualities upon his people became more tenuous and the more easily broken and abused, especially when these qualities as manifested in his descendants became more dilute. Thus started man's political homogenization, democracy. The vote of the citizen of substance and accomplishment was worth no more, no less, than that of the village idiot, the very dire consequences being the equivalence of the votes of those who *could* separate short-term benefits to themselves from long-term benefits to their country, and of those who could not. *Panem et circenses* of ancient Rome, the politically motivated handouts of today, both examples of the seeds of destruction planted at the time of conception of every democracy. Whether these seeds germinate and the plant matures is a function of the people of that democracy. The conduct and end of our democratic antecedents give us here today little cause for optimism.

Nothing is more suitably designed to effect economic egalitarianism than our present predatory tax structure. Industry, providence, ability, and every other virtue known to man are herewith penalized. If a sliding scale were to be used at all, it would be as sensible to use the higher rates as a stimulus to the laggard in the production of society's goods and services. The votes of the laggards are too many to allow this, or to change the present bountiful (to them) structure.

Educational egalitarianism follows naturally from the necessity of

educating large numbers. This egalitarianism has gone so far as even to set by law the age of beginning school. Dullards and scholars are thus cut to the same measure.

"Children's books are now being written according to graded word lists so that words not within a child's vocabulary won't appear in the books." Thus, children can learn only what other children know, and "each generation, living in a world where the demands on vocabulary are greater than before, gets a little further behind". Egalitarianism at its worst. Even we in the learned professions are urged to discourse in unadorned monosyllabics, even though the plane of cleavage between tastefully embellished communication and bombastic pomposity is sharp. We have been urged to replace Sir William Osler's "More than anyone else, the roentgenologist needs the salutary lessons of the deadhouse" with "The roentgenologist should know pathologic anatomy thoroughly" (Medical World News, p. 60, July 5, 1963). Let the discerning reader make his choice.

The informed, sensitive, scintillating master with chalk in hand at the front of the room, imparting knowledge and checking for substantial reception of same, must now compete with the flickering electronic shadow originating miles away, or even worse, with a teaching machine.

CHRISTIAN V. CIMMINO, M.D.

New Members.

The following doctors were received into membership in The Medical Society of Virginia during the month of June:

William Leon Bekenstein, M.D., Fairfax
William Brushwood Brown, M.D.,
Gloucester
Tony Constant, M.D., Richmond
Jorge Ibarra, M.D., Norfolk
William Rutherford Mauck, M.D.,
Richmond
Stage E. Miller, M.D., Mount Jackson
Jerome Henry Sacks, M.D., Richmond
Percy Wootton, M.D., Richmond

Dr. Cox Honored.

Dr. Russell M. Cox, Portsmouth, has been chosen First Citizen of 1962. His citation reads "Not only for his community activities in 1962 but for the multitude of services he has performed consistently for the people of Portsmouth since coming here in 1921." The annual award is sponsored by Portsmouth Lodge 898, Loyal Order of the Moose and the recipient is chosen by a committee composed of former first citizens.

Dr. Cox is secretary-treasurer of the State Board of Medical Examiners and a director of the Virginia Medical Service Association and has been public school physician for twenty-two years.

Roanoke Academy of Medicine.

Dr. Charles D. Smith has been named as president-elect of the Academy. Dr. Louis S. Ripley, current president-elect, will be installed as president at the October meeting. Dr. R. Early Glendy is the retiring president.

Norfolk County Medical Society.

Dr. Alter Laibstain has been installed as president of this Society, succeeding Dr. John Thiemeyer. Other officers are Dr. Robert J. Faulconer, president-elect; Dr. Joseph

D. Lea, vice-president; Dr. Robert Maddock, recording secretary; Dr. William Hoover, corresponding secretary and Dr. Reginald Henry, treasurer.

Virginia Society of Ophthalmology and Otolaryngology.

New officers of this Society are Dr. Harry B. Stone, Jr., Roanoke, president; Dr. Marion K. Humphries, Jr., Charlottesville, president-elect; Dr. Adrian J. Delaney, Alexandria, vice-president; and Dr. Peter A. Wallenborn, Roanoke, secretary-treasurer.

The 1964 meeting will be held at the Marriott Key Bridge Motor Hotel, Arlington, April 30th through May 2nd.

The Virginia Board of Medical Examiners

Conducted its summer examinations in June. The total number of applicants who has passed Part I and who took Part II of the examination was 236. Two hundred and nineteen doctors were licensed, 121 being graduates of medical schools in the United States and 98 of foreign medical schools. Ninety three doctors were licensed by endorsement from other States. There were only two failures of doctors who graduated in the United States, and the percentage of failures of foreign graduates was 13.3%.

Dr. Robert A. Hoffman,

Richmond, has been elected president of the Virginia Chapter, National Kidney Disease Foundation.

Dr. W. Linwood Ball,

Richmond, has been elected president of the newly formed Chapter Two of the Richmond Howitzers Association.

State Board of Medical Examiners.

Governor Harrison has appointed the following doctors as members of the State

Board of Medical Examiners for a term of five years:

Dr. Joseph E. Gladstone, Exmore, to succeed himself.

Dr. Russell M. Cox, Portsmouth, to succeed himself.

Dr. Harry C. Bates, Arlington, to succeed Dr. John C. Watson.

Dr. John P. Lynch,

Richmond, has been appointed chief of the medical staff of the Virginia Home of Incurables. He succeeds Dr. Henry W. Decker who will remain as honorary chief. Dr. James O. Burke has been named assistant.

Dr. Carl P. Parker, Jr.,

Falls Church, has been awarded a certificate of merit by the Board of Trustees of Fairfax Hospital in recognition of his efforts in organizing the institution's original medical staff.

Now Leasing

At McLean, Virginia. Few suites still available in new multi-story elevator building in fast-growing suburb of Washington, D. C. To be ready for occupancy August 1963. Write P. O. Box 502, McLean, or phone KEnmore 8-5010. (*Adv.*)

Doctor's Suite Available

In Medical Building at very busy, large apartment community of 10,000—with immediate surrounding area of 20,000 more. Three rooms and bath. This is a wonderful

opportunity. Contact L. F. Kettell, 313 North Glebe Road, Arlington 3, Virginia. Phone Jackson 2-5004. (*Adv.*)

Office Space

To buy or rent in the new Annandale Doctors' Building, Annandale, Virginia. Northern Virginia's fastest growing area. Certain specialists such as pediatrician, radiologist, ENT, orthopedic surgeon, neurologist, neurosurgeon, psychiatrist, allergist, dermatologist are especially desired. For information call Dr. Wagman, JE 4-4449 or SO 8-7991. (*Adv.*)

Anesthesiologist,

Board certified, desires to relocate because of unfavorable local conditions. Virginia license. Reply to #65, care the Virginia Medical Monthly, 4205 Dover Road, Richmond 21, Virginia. (*Adv.*)

Urgent Need for General Practitioner

Interested in locating at Hershey, Pennsylvania. To start clinic in new large colonial residence with offices, adjoining Snively Memorial Nursing Home. Contact Joseph R. Snively, Hershey, Pennsylvania. Phone KE 4-1017. (*Adv.*)

Physicians

Wishing postgraduate training of three months or more or residency in Anesthesiology are invited to contact D. W. Eastwood, M. D., University of Virginia, Charlottesville. (*Adv.*)

Obituaries . . .

Dr. Edward Lee Alexander,

Newport News, died June 24th after a short illness. He was sixty-one years of age and a graduate of the Medical College of Virginia in 1927. After his internship, Dr. Alexander began his practice in Newport News. He was a member of the medical staffs at Mary Immaculate, Dixie and Riverside Hospitals and a medical consultant in allergy at Kecoughtan VA Center Hospital. Dr. Alexander was instrumental in organizing the Peninsula Academy of Medicine. During World War II he served as a commander in the U. S. Naval Medical Corps and was the recipient of a commendation from the Surgeon General. Dr. Alexander was a past president of the Rotary Club and represented his Club at the international meeting in Mexico City. The alumni association of the Medical College of Virginia voted him Man of the Hour in May 1958. Dr. Alexander had been a member of The Medical Society of Virginia for thirty-three years.

His wife and a son, Dr. Alexander, Jr., survive him.

Dr. Regena Johnson Beck,

Richmond, died June 24th at the age of seventy-one. She was a native of Ohio and received her medical degree from George Washington University in 1921. She was for a time an instructor in pathology and bacteriology at her college of graduation. Following her location in Richmond, Dr. Beck became head of the department of bacteriology at William and Mary Extension and director of the Stuart Circle Hospital school of medical technology. Dr. Beck also held a degree in music from the Cincinnati Conservatory. She had been a member of The Medical Society of Virginia for twenty-seven years.

A daughter and a sister survive her.

Dr. Harold Wilbur Miller,

Woodstock, died July 4th. He was sixty years of age and received his medical education from the Medical College of Virginia, graduating in 1931. Dr. Miller was county medical examiner for Shenandoah County, a member of the State Board of Health and the Virginia Council of Higher Education. He was also a lay leader of the United Church of Christ. Dr. Miller had been an active member of The Medical Society of Virginia since 1934, having served as a member of Council and on several committees.

His wife and five children survive. Two of his sons are doctors, Dr. H. W. Miller, Jr., of Woodstock, and Dr. R. H. Miller of Indianapolis.

Dr. Stuart Wray Selden,

Kents Store, died June 29th, at the age of eighty-three. He was a graduate of the Medical College of Virginia in 1904 and practiced in West Virginia until 1923 when he located at Kents Store. Dr. Selden had been a member of The Medical Society of Virginia for nineteen years.

His wife, three sons and two daughters survive him.

Dr. Maynard Robert Emlaw,

Richmond, died June 29th. He was fifty-six years of age and received his medical degree from the University of Virginia in 1939. Dr. Emlaw was medical director for the Virginia Electric and Power Company and medical adviser for the Federal Reserve Bank. He was a flight surgeon in the army air force during World War II. He had been a member of The Medical Society of Virginia since 1946.

His wife, Lucia Klause Emlaw, survives him.

Dr. Grossi Hamilton Francis,

Norfolk, died May 5th after a long illness. He had been a member of The Medical Society of Virginia for eight years. The following resolutions were adopted by the Norfolk County Medical Society:

Dr. G. Hamilton Francis was a native of St. Kitts, British West Indies. The son of Barnabus and Mrs. Mary C. Hamilton Francis, he was born November 29, 1885. He attended Wesleyan School at St. Kitts and Berkley Institute at Hamilton, Bermuda. In 1907 he came to America and studied at Meharry Medical College, where he earned the M.D. degree.

He began the practice of medicine in Norfolk, in 1911. Always interested in medicine and medical affairs Dr. Francis took an active part in community affairs, particularly in the field of medicine in the city of his choice. He practiced medicine for fifty-two years.

Dr. Francis had served as physician in charge of medical service at Norfolk Community Hospital. He was instrumental in the establishment of a yearly Post Graduate Clinic for colored physicians at St. Philip Hospital in Richmond. In 1933 Dr. Francis studied tropical diseases in the West Indies.

He filled with distinction many administrative positions in the organizations with which he was connected. He was a past president of the National Medical Association and of the Old Dominion Medical Society, also of the Norfolk Medical Society. He was a member of the Norfolk County Medical Society, The Medical Society of Virginia and the American Medical Association. He served energetically as a fellow of the Public Health Association, Chief Medical Examiner of Norfolk Draft Board No. 1, Associate Chief of Staff of Norfolk Community Hospital and member of American Association for Advancement of Science.

A number of honors have been bestowed upon him. Virginia Union University bestowed upon Dr. Francis the Doctor of Science degree in 1944. On April 25, 1944, he was one of eleven persons honored for having given forty years of service to the Norfolk Community Hospital. He also received the Omega Achievement Award and in 1954, was given the Distinguished Service Award by the National Medical Association.

Dr. Francis was not only interested in medical groups and associations but was an active member of other groups as well. He was founder and past president of the board of Berkley Citizens Mutual Savings

and Loan Association. Fraternally he was a member of Omega Psi Phi Fraternity, Frontiers of America, Aeolian Club, Hiawatha Social and Beneficial Association, Alpha Beta Bohle, Ebenezer Masonic Lodge No. 66, 33rd degree Mason and Berkley Elks Lodge and Shriners.

A devoted churchman, Dr. Francis was a member of Grace Episcopal Church where he served as Vestryman and formerly was a Senior Warden. He possessed many fine qualities of character which marked him as a person of distinction.

He is survived by a wife and two daughters.

He was affable, jovial, possessing a keen sense of humor, intensely loyal to family, friends and organizations. He loved his fellowman and enriched the lives of those around him by rendering service to the community.

The medical profession has lost a valuable member. He will be missed by those who relied upon him for his knowledge and skill, and by his friends and co-workers, to whom he was loyal and always ready to lend assistance.

THEREFORE, BE IT RESOLVED, that the members of the Norfolk County Medical Society extend their deepest and most sincere sympathy to the family of our departed colleague.

BE IT THEREFORE RESOLVED, that this resolution be recorded in the minutes of the Norfolk County Medical Society and copies sent to the family and to the Virginia Medical Monthly.

C. R. S. COLLINS, M.D.
P. E. THORNHILL, M.D.
J. O. WILLIE, M.D.
J. Q. A. WEBB, M.D.

Dr. Antonio Fulvio Palmieri,

Richmond, died July 2nd. He was a native of Italy and thirty-eight years of age. Dr. Palmieri received his medical degree from the University of Florence in 1952 and came to the United States the following year as an intern in Richmond. He completed his residency in Washington and Alexandria, returning to Richmond in 1959 where he entered the private practice of Obstetrics and Gynecology. He had been a member of The Medical Society of Virginia for four years.

His wife and two daughters survive him.

Guest Editorial

To the Physicians of Virginia

I WOULD LIKE to take this opportunity to introduce the Virginia Medical Political Action Committee, what led to its development, what its aims are, and how you, as physicians, can participate.

For many years it has been an increasing source of concern to the physicians, both individually and collectively, that the individual rights which the profession has fought so hard to maintain are slowly being whittled away. In its place is a welfare state with strong centralization, bureaucracy and all the evils that go along with this. For reasons which are multiple and diverse, the individual doctor has not felt competent to meet this problem and has developed a somewhat frustrated attitude, feeling that perhaps nothing could be accomplished. However, fertilizing this seed of discontent and nurtured by the ever increasing infringements, the medical profession has finally roused itself and has now created, in all 50 states, Political Action Committees which confine their activities within the state boundaries, and in addition, there has been created AMPAC, the American Medical Political Action Committee which is concerned with the nation as a whole. These committees have the blessings of the state medical profession, in the form of resolutions passed by the House of Delegate of the state medical societies and their objectives are (1) to obtain members and money (2) to educate the membership politically (3) to support candidates.

This is a voluntary, bi-partisan association of physicians interested in identifying medicine's interest in good government. These are autonomous groups which work co-operatively with AMPAC and other organizations with mutual interests. It is to be stressed that the Political

Action Committee has no concern whatsoever with legislative programs, which are purely a function of the state medical society. However, the Political Action Committee does concern itself about the Congressmen from the various states who will be in the 89th Congress and it also concerns itself about our state candidates who are to be elected in any future election. The Medical Society's Committee on legislation is responsible for the legislative policy of the Society and it does not involve itself with the political action activities assigned to the state political action committees.

It is my earnest hope that the doctors of Virginia will seek membership in VaMPAC and by doing so, will join together as a political force which will be effective in preserving the ideals for which we so sincerely believe and for which we would like to have our children enjoy when they are ready for adult life. Let me assure you that this will not be an easy task because there are strong forces at work in this country whose sole purpose is the creation of that state which we do not approve of and I, therefore, urge you to give strong consideration to becoming a Sustaining Member of VaMPAC. Only in this way can we possibly meet the challenge which is facing us.

THOMAS S. EDWARDS, M.D.
Chairman, VaMPAC

Congenital Defects of the Skeleton

A. R. SHANDS, JR., M.D.
Wilmington, Delaware

The etiology of these congenital malformations is now better understood and therapeutic results have been improved by new methods of treatment.

CONGENITAL DEFECTS or malformations of the skeleton involve primarily bone and cartilage, but secondarily may involve ligaments, tendons, muscles, nerves, blood vessels, skin and subcutaneous tissue.

Congenital malformations, or CMs as they are commonly referred to, have been defined as "abnormalities of structure attributable to faulty development." The question should be asked: "When does faulty development take place in the skeleton?" A faulty development for many of the skeletal defects may occur in the embryonic period as early as the fourth week of pregnancy, at which time the limb buds first appear. However faulty development of the spine may begin as early as the sixteenth day of pregnancy, at which time the first pair of somites or primitive segments appear in the mesoderm on either side of the notocord; these structures then become the central axis around which the spine or vertebral column develops.⁷

Incidence

The reports on the percentage of all

SHANDS, A. R., JR., M.D., *Medical Director, Alfred I. duPont Institute of the Nemours Foundation.*

Given at a Symposium on Birth Defects at Vanderbilt University Hospital, sponsored by The National Foundation and Vanderbilt University School of Medicine on September 28, 1962.

types of CMs in live births in the United States varies from .5 to 7.0 per cent, with the average in several well-documented series being 2.5 per cent. Sixty point seven per cent (60.7%) of CMs are in the male and 39.3 per cent in the female; 13.6 per cent are reported to die in the first year.¹¹ Of all the fields of medicine, orthopaedic surgery has concern with the largest number of CMs, this being from 25 to 40 per cent in reported series. Next in frequency to those of the skeletal system are the CMs of the brain and nervous system. On the basis of four and one-quarter million annual live births in the United States, the author estimates that there are at least 25,000 babies born each year with one or more major congenital skeletal defects requiring treatment by the orthopaedic specialist.

The incidence figure of 2.5 per cent for our country may be high. In a Symposium on Congenital Malformations of the Ciba Foundation in 1960, there is a report by McKeown and Record¹² of the University of Birmingham in England on the study of 56,760 births (55,539 live born and 1,221 stillborn), with the percentage of CMs after two weeks being 1.73. However after five years this percentage had increased to 2.3. This is the same percentage which has been reported by Batson in 5000 births at the Vanderbilt University Hospital.¹ J. V. Neel¹³ in 1958, in his work with Atomic Bomb Casualty Commission, reported on the study of 64,570 births in Japan. Soon after birth the percentage of CMs was 1.22; however after nine months the percentage had increased to 2.45. In 1951 Böök² of Sweden reported in his country on a study of 44,109 births. The percentage soon after birth was 1.11 per cent, but no report is given of the percentage at a later date. The average percentage of these three

studies on congenital malformations at birth is 1.35 per cent.

Next, the question should be asked: "What are the most common congenital defects of the skeleton?" The answer to this question your speaker can best answer by giving statistics on CMs from the Alfred I. duPont Institute, a hospital for crippled children in Wilmington, Delaware. For a period of seventeen years after the Institute was opened, there was a steady increase in the percentage of admissions with CMs from a low of 27 per cent to a high of 66 per cent. (Graph 1) Since 1957 the percentage has leveled off and has been between 53 and 66 per cent. From 1954 to 1962 the average was 58.9 per cent, and during this eight-year period there were 729 children examined with CMs exclusive of metatarsus varus and adductus, hemangioma, cerebral palsy and congenital developmental errors of the skeleton. (Chart 1) Clubfoot, or talipes equi-

INFORMATION ON CONGENITAL MALFORMATIONS* SEEN AT THE ALFRED I. DUPONT INSTITUTE FROM 1954 TO 1962

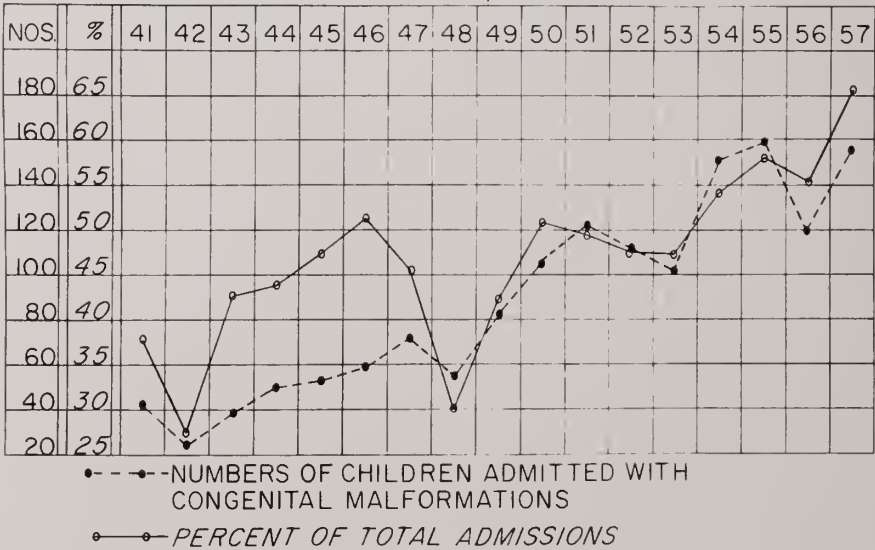
A. General		
Number of new patients	3,891	
Per Cent with CMs	41.7%	
Number of hospital admissions	2,141	
Per Cent with CMs	58.9%	
B. Most Common Conditions*		
	No.	Per Cent
Talipes Equinovarus (Clubfoot)	111	15.2
Harelip and Cleft Palate	95	13.1
Dislocation of the Hip	78	10.7
Spina Bifida Vera	54	7.4
Talipes Calcaneovalgus	39	5.3
Deformity of Ear	33	4.5
Polydactyly & Syndactyly	30	4.1
Amputations	23	3.2
Torticollis	22	3.0
Miscellaneous	244	33.5
TOTAL	729	100.0

*These do not include metatarsus varus and adductus, cerebral palsy, hemangioma, and congenital developmental errors of the skeleton.

CHART 1

It has long been known that the percentage of the types of CMs is not the same in

GRAPH SHOWING CONGENITAL MALFORMATIONS AT THE ALFRED I. DUPONT INSTITUTE, 1940-1957.



GRAPH 1

novarus, constitutes the greatest number, being 15.2 per cent and harelip and cleft palate next with 13.1 per cent. The next in order of frequency were dislocation of the hip (10.7%), spina bifida vera (7.4%) and talipes calcaneovalgus (5.4%).

all races. The difference in the frequency of the types in the English and Japanese people is strikingly brought out in the statistics from the papers of McKeown and Record¹² and Neel.¹³ Cleft lip and palate after five years in the English series was

.194 per cent, or 1 in 515 births, and after nine months in the Japanese series .30 per cent, or 1 in 333. In the English series after five years clubfoot was .44 per cent, or 1 in 227 live births, and in the Japanese series after nine months .14 per cent, or 1 in 714, or approximately three times more common in England than Japan. Spina bifida was .30 per cent, or 1 in 333 births, in the English series and .03 per cent, or 1 in 3333 in the Japanese series, or ten times more common in England than in Japan. However the percentage of congenital dislocations of the hip in the English series was .067 per cent after five years, or 1 in 1493 live births, and in the Japanese series .71 per cent after nine months, or 1 in 141, or over ten times more common in Japan than in England. The marked difference in the incidence of spina bifida and congenital dislocation of the hip in England and Japan, I do not believe can be satisfactorily explained with our present knowledge. A genetic factor, particularly in spina bifida vera, may be present. However in congenital dislocation of the hip some believe that genes are not involved but that it is due to a mechanical factor in utero. With the great number of races we have represented in the population of the United States, it is quite likely that the average figures for our whole nation would be midway between these English and Japanese figures.

Etiology

In view of the recent evidence from Germany showing the relationship between the drug Thalidomide taken during pregnancy and extremity deficiencies, it is appropriate for a word to be said about etiology. Phocomelia, ectromelia, amelia and similar conditions which have followed the use of Thalidomide in early pregnancy and also which may follow hypoxia in the first few weeks of pregnancy are all problems cared for by the orthopaedic surgeon. I have recently been told that 25 per cent of 6,000 German cases have a clubbed hand deformity with absence of the radius and thumb,

and that the lower extremities are not involved unless there be a phocomelia.⁵ Fortunately about 50 per cent of these cases were still births or have died since birth. With this positive evidence as a cause, one must think more strongly than ever before about the dangers of injury to the embryo, or fetus, in the early weeks or even days of pregnancy with the use of drugs and hormones. The outstanding work of Warkany¹⁸ in his studies with vitamins and diet in rats and the work of Duraiswami⁴ in the use of insulin in eggs in chickens certainly are evidences of dietary and hormonal causes of congenital defects in the experimental animal which suggest that the same may be applicable to man. The evidence that rubella (German measles) in the early weeks of pregnancy will result in serious congenital malformations, as first reported by Gregg⁸ in 1941 in Australia and confirmed in other clinics, is evidence that there is a virus factor in many instances. Also, it has long been known and proven experimentally in animals that excessive irradiation of the mother in pregnancy may be associated with an increase in CMs. If the number of CMs is to be decreased, we as physicians must pay more attention than we have in the past to drugs, hormones, faulty diet, rubella and exposure to x-ray in pregnancy. Prospective mothers must be warned of their dangers and we as physicians should do all that we can to minimize the risks.

Treatment

In crippled children's hospitals, clubfoot is nearly always the most common congenital condition observed. In the Children's Bureau statistics for 1959,¹⁷ clubfoot constituted (1) 6.7 per cent of nearly 340,000 cases and (2) one-fourth of all congenital malformations. This was by far the most frequently recorded CM. In our hospital 215 cases have been seen in the twenty-two years the Institute has been opened. Early, persistent and prolonged treatment and observation is the key to the success in the

correction of these deformities. In a recent five-year follow-up of our cases, there were 72 per cent with good or excellent results.¹⁰ In the analysis of the unsatisfactory cases, undoubtedly the number one cause was failure of the parents to return the child for continued treatment and observation. Your speaker is convinced that the closed plaster method of Kite⁹ of Atlanta is the best treatment for the clubfeet in infants and young children. With the changing of the cast there is carried out a gentle manipulation of the foot towards the corrected position. It was shown in our series that night splints over a long period of time following correction are most important for the prevention and control of recurrences. When there is the least tendency towards a recurrence, the Kite treatment should immediately be started again.

The next in order of frequency of orthopaedic conditions in our Institute are congenital dislocations of the hip (CDH), of which 123 cases have been cared for. For the treatment of CDH in all ages, we certainly do not have the answer. We do know that if CDH is recognized early, i.e., when the baby is only a few weeks old, the use of a splint to abduct both hips may very often result in a good hip joint when the child is ready to walk. The author believes that a closed reduction is the best treatment for the infant until two or three years of age; however, if the closed method is not successful in this age period, the dislocated hip should be reduced by open operation at any age after one year but not before one year. He feels that the child, following closed reduction, should be kept in plaster for at least six to nine months before starting ambulation. One reason for the many unsatisfactory results in the treatment of CDH is that not enough attention is usually paid to increase in anterior torsion (anteversion) of the femur which is nearly always present; the amount of torsion can be determined by roentgenograms taken in the appropriate positions.¹⁶ In most cases a femoral rotation osteotomy to correct this

excessive torsion should be done following reduction in order to insure a more normal relationship between the head of the femur and the acetabulum on weight bearing.

The early application of a prosthesis in the child with a congenital amputation, of which our Institute has had thirty-three cases, is certainly one of the significant advancements in recent years. It is now the belief of those who have had the most experience with the child amputee that a prosthesis should be applied to a lower extremity as soon as the child would normally start to walk and for the upper extremity even earlier.⁶ Some believe that a small non-functioning arm or mitt should be used when the child is a few months old; and that as soon as the child can follow training directions and has sufficient neuro-muscular development, a prosthesis with a functional hook should be fitted.³ This usually is at about two years of age. A great deal of the credit for the progress made in the care of these congenital conditions should be given to Dr. Arthur J. Lesser of the Children's Bureau, who has had much to do with the organization of our national program for the child amputee.

The present treatment of spina bifida vera, with the accompanying paraplegia and incontinence, of which sixty-nine cases have been seen at the Institute, is very unsatisfactory. Several operations have been devised to improve the continence of bowels and bladders, but on the whole these operations have not been satisfactory. The rehabilitation of this patient is comparable to the rehabilitation of the paraplegia due to a spine fracture and cord injury. Many of these cases have associated hemivertebrae and go on to extreme distortion of the back, in spite of the use of braces and corsets to hold the trunk erect. Often it may be wise to decide very early to make this patient a wheel chair case and not attempt to ambulate with braces and crutches.

What to do with congenital conditions of the spine other than the spina bifida, particularly those showing one or more

hemivertebrae, has always been a problem. Some of the most severe of the spinal curvatures seen in orthopaedic clinics are those due to hemivertebrae.¹⁴ In our clinic there have been twenty-two of these cases cared for. In many cases the congenital spine will be relatively straight until adolescence, at which time the growth of the child is accelerated. It is then that extreme distortion of the spine may take place and this may occur very rapidly, i.e., over a period of two years. Fusion of the involved portion of the spine before this growth spurt occurs may occasionally prevent an increase of the deformity, but in many instances it does not alter this increase. The use of the Milwaukee, or Blount, brace as a measure to prevent or to minimize deformity in the congenital spine has at times been helpful. Occasionally in the young child a mild kyphosis may be present due to an anterior fusion of two or more vertebral bodies. This kyphosis may show a marked progression at adolescence. A fusion operation of the involved spine to prevent the increase of this deformity again has been of questionable value.

The treatment of harelip and cleft palate, of which condition our Institute has cared for 221 cases, is now quite satisfactory in the hands of the plastic and dental surgeons. This condition constituted 4.7 per cent of the 1959 Children's Bureau cases¹⁷ and approximately 1/6th of all CMs reported. Early closure of the cleft lip and use of a palate prosthesis when the palate cannot be closed, followed by adequate speech training, usually gives an excellent result with a normal appearance, as well as good speech. This has not been always true. Dr. Herbert K. Cooper of Lancaster, Pennsylvania, who established the Lancaster Cleft Palate Clinic, has been the outstanding pioneer in this field. Largely due to his great enthusiasm and leadership, there is practically no state in the Union today which does not have good services for the cleft palate case.

Many new operations have been developed for such congenital conditions as

syndactylism, clubbed hand, the absences of long bones, and elevation of the scapula (Sprengel's Deformity), but time does not permit much more than to say that the operations on these deformities are much more satisfactory now than ever before.

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Physical Activity Important in Asthmatic Boys

Regular exercise and participation in the ordinary games of childhood are an important part of treating young boys with bronchial asthma, according to University of Texas researchers.

A pilot study of the effect of exercise on asthmatic youngsters was reported by Thomas R. McElhenney, M.D., and Kay H. Petersen, Ph.D., Austin, Texas, in the July 13th *Journal of the American Medical Association*.

Twice a week for four months, 20 boys from 8 to 12 years old took part in an activity program designed to increase gradually the time and effort required to develop strength, endurance and skill, and to provide individual instruction and encouragement to practice basic body skills. The activities included calisthenics, simple games, relays, and later competitive lead-up games to softball, basketball, and volleyball as well as tumbling, the rudiments of weight train-

ing and swimming. "The results of this four-month pilot study were very encouraging to the boys, their parents, and the authors as each of the 20 boys showed improvement, some more than others."

The lung capacity of 14 boys was measured prior to and at the end of the program. The average increase in vital capacity was 18 per cent. There also was an approximate 30 per cent reduction in the number and severity of the asthmatic attacks and an equivalent diminution in the need for symptomatic drug therapy.

One of the most satisfying aspects of the study was providing the chance for these boys to compete successfully, thereby transforming them from "watchers" to "doers".

The authors recommended that school boards create remedial or adapted programs of physical education for all children in the community who are "below par," including asthmatic children.

Differential Diagnosis of Benign, Malignant and Inflammatory Extrinsic Lesions of the Gastro-Intestinal Tract

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The barium enema is a valuable aid in identifying and locating lesions extrinsic to the gastro-intestinal tract, benign, malignant, or inflammatory.

THE PURPOSE OF THIS PAPER is to present the gross appearance of lesions that are extrinsic to the gastro-intestinal tract and to discuss and demonstrate the changes that these lesions bring about in the adjacent segment of bowel.

Although somewhat similar work has been previously published,^{1,2} the diagnostic value of the barium enema and the mucosal relief studies in locating and identifying extrinsic disease has not been emphasized. Furthermore, it has been learned that the addition of tannic acid* to the enema mixture brings about more complete evacuation of the colon and thus the mucous membrane can be better visualized.

After one sees a demonstration of the anatomical changes that take place, one can see why an examination with barium can add worthwhile information in locating and differentiating these extrinsic lesions.

Benign Extrinsic Lesions

The benign extrinsic gastro-intestinal tract lesions, when visualized on the prelimi-

nary film of the abdomen, show the tumor mass as a homogenous density whose margins are usually smooth and sharply circumscribed. When barium is given by rectum, the adjacent segment of colon may be displaced, but shows normal distensibility. The wall margins show normal haustrations and there is no abnormality of contour. The post-evacuation film will show the mucous membrane to be perfectly normal.



Case I—Fig. 1. The plain film of the abdomen shows the benign tumor mass to have a smooth, sharply circumscribed margin.

Case I: This patient (Fig. 1) had a benign pseudocystadenoma of the ovary which was approximately the size of a six month's pregnancy. The tumor mass can be seen

* 35 gms. of tannic acid U.S.P.
500 gms. of barium sulfate
3500 gms. of water

extending upward out of the pelvis and its smooth sharply circumscribed margin is clearly visualized. The post-evacuation film (Fig. 2) of the same patient shows the bowel wall and the mucous membrane to be entirely normal.



Case I—Fig. 2. The post-evacuation film shows the mucous membrane and the bowel wall adjacent to the tumor to be normal.

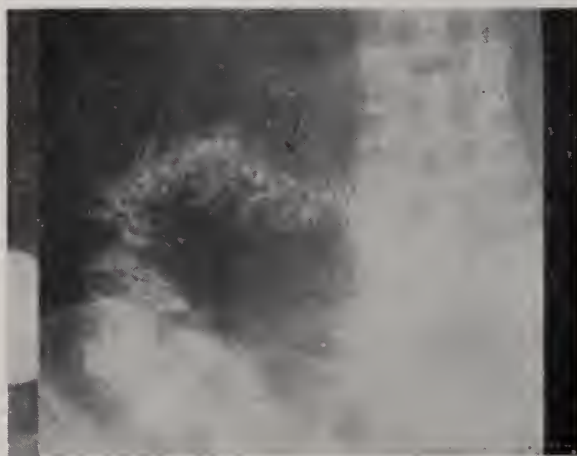
Malignant Extrinsic Lesions

The extrinsic malignant lesions are best visualized when located in the pelvis. They are usually seen as an area of increased density and do *not* have sharply circumscribed margins. The barium enema examination will frequently show segmental rigidity, displacement, fixation, luminal narrowing and serration of the adjacent segment of bowel. These serrations assume many and variable configurations, ranging from sharply pointed inverted "v's" to irregular rounded elevations. A detailed study of the mucous membrane is important in such cases and will further help to differentiate malignant from inflammatory lesions. In malignancy, the mucous membrane will show an *absence* of edema, while in inflammatory diseases there will be rather *marked* edema.



Case II—Fig. 3. The carcinoma of the gall bladder has invaded the transverse colon, producing serrations, rigidity and luminal narrowing.

Case II: This patient (Fig. 3) had a primary carcinoma of the gall bladder which had invaded the transverse colon just beyond the hepatic flexure. This small segment of the colon shows serrations, rigidity and luminal narrowing. Note on the post-evacuation film (Fig. 4) that the mucous membrane does *not* show edema and that portion that is seen en face appears normal.



Case II—Fig. 4. The post-evacuation film shows absence of edema of the mucous membrane.

Case III: A 26-year-old white woman had a scirrhus carcinoma of the stomach which had invaded the mid transverse colon. (Fig. 5) It can again be seen that there is rigidity, narrowing of the lumen, marginal serrations and definite *lack* of edema of the mucous membrane.



Case III—Fig. 5. Scirrhus carcinoma of the stomach has involved the mid transverse colon by direct extension. Note the rigidity, luminal narrowing, marginal serrations and absence of edema.

Extrinsic Inflammatory Disease

When extrinsic inflammatory disease is visualized on a plain film of the abdomen, the poorly delineated soft tissue mass has the same appearance as that seen in extrinsic malignancy. The adjacent loops of small bowel frequently are slightly dilated with gas. The absence of the preperitoneal fat line is said to be helpful. Rarely, a fecalith may be seen in the region of the appendix, and if seen, one should bear in mind the possibility of a ruptured appendix.

The adjacent segment of the barium-filled bowel in extrinsic inflammatory disease shows serrations, frequent contraction, limited distensibility, partial fixation and may be displaced. These serrations are a rather constant finding, but they do not present any characteristic features to distinguish them from extrinsic malignancy.



Case IV—Fig. 6. This "spot film" of the sigmoid shows displacement, fixation, a few serrations and marked edema of the mucous membrane, indicative of extrinsic inflammatory disease.

They are probably the result of bowel wall involvement by inflammatory cells and exudate. In contrast to extrinsic malignancy, the mucous membrane will show thickening and elevation of the mucosal folds due to edema. The presence of gas bubbles outside of the barium-filled bowel is extremely helpful, and usually indicates the location of an abscess, whose etiology is a gas-producing organism.

Case IV: This patient (Fig. 6) had a left lower quadrant abscess due to actinomyces which was thought to be primary in the left tube. It can be seen that the sigmoid is displaced and fixed. The serrations are noted mainly on the superior surface and the mucous membrane is markedly edematous.

Case V: A plain film of the abdomen (Fig. 7) shows the soft tissue mass in the pelvis as a homogenous density, but it does not have a clear-cut outline and it appears to

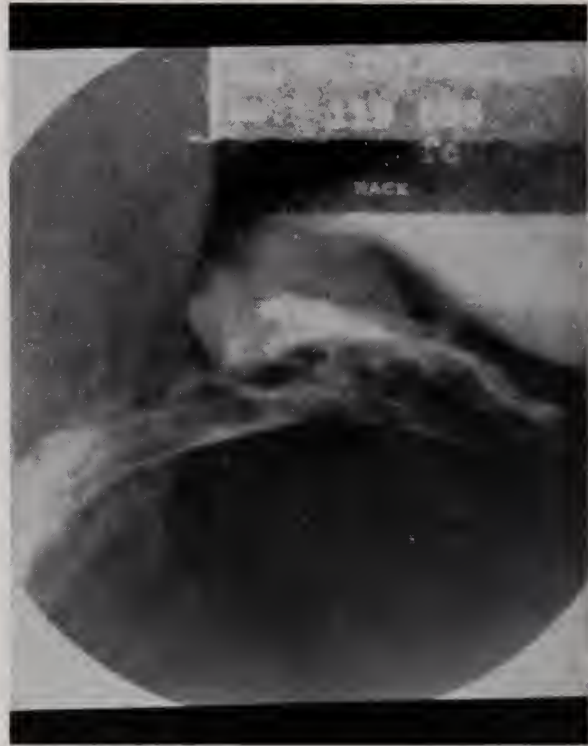


Case V—Fig. 7. The inflammatory mass in the pelvis casts a homogenous density and its margin is not sharply demarcated.

fade out imperceptibly into normal tissue density. On barium enema examination (Fig. 8) the adjacent rectosigmoid portion of the colon shows limited distensibility and

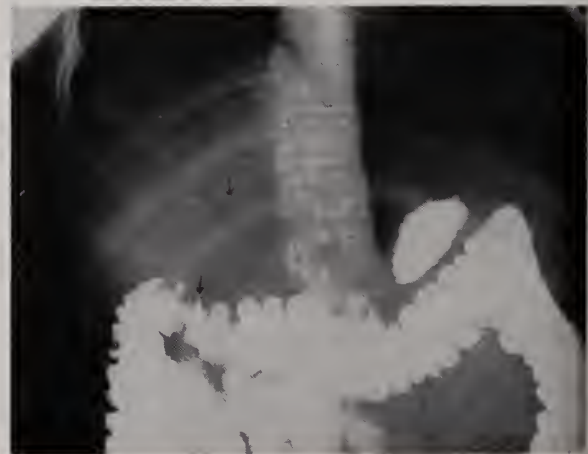


Case V—Fig. 8. The extrinsic inflammatory disease is producing the limited distensibility at the recto-sigmoid junction.



Case V—Fig. 8A. This "spot film" of the barium-filled sigmoid shows marked edema of the mucous membrane.

the serrations are seen on the superior surface. A spot film (Fig. 8A) over this segment shows marked edema of the mucous membrane. The diagnosis of extrinsic inflammatory disease was made in this case and after penicillin and streptomycin therapy, all symptoms and physical findings disappeared in approximately two months.



Case VI—Fig. 9. The barium enema demonstrated limited distensibility of the colon at the hepatic flexure. At the time of fluoroscopy, frequent, hard contractions were seen in this same area. Note also the localized collection of gas just above.

Case VI: This white female had a cholecystectomy. During the operation brisk bleeding was encountered in the gall bladder bed and a piece of gel foam was used to help control hemorrhage. Seven days later she developed fever, chills and leukocytosis. The barium enema (Fig. 9) examination showed a collection of gas in the right upper quadrant, spasm of the adjacent colon and edema of the mucous membrane. At operation a sterile abscess was found in the region of the gall bladder bed.

Case VII: Following a cholecystectomy a 33-year-old white female did well for fourteen days. Then she developed nausea, vomiting and slight leukocytosis, but did not have fever. The barium examination revealed bubbles of gas (Fig. 10) in the gall



Case VII—Fig. 10. Gas bubbles are present in the right upper quadrant. The adjacent barium-filled colon shows serrations and limited distensibility.

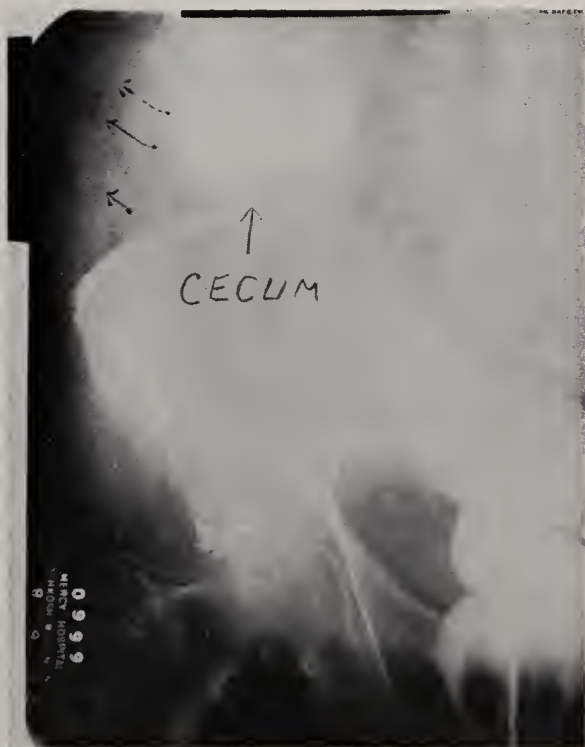
bladder area, spasm and serrations of the wall of the adjacent colon. Elevation of the antrum of the stomach with obstruction near the pylorus was demonstrated (Fig. 11). At operation dense adhesions were found

obstructing the stomach outlet and a small pocket of pus was found in the area of the adhesions.



Case VII—Fig. 11. This post-evacuation film of the colon with some barium in the stomach demonstrates (1) elevation of the antrum of stomach and (2) gas bubbles in the right upper quadrant.

Case VIII: A seventy-seven-year-old white male developed nausea, vomiting and diarrhea, lasting for approximately one day, after which the patient felt well again. On the following day, fecal vomiting started



Case VIII—Fig. 12. The gas bubbles lateral to the cecum are clearly visible. Note the absence of serrations, spasm and edema.

and the patient rapidly became very ill. He was examined radiologically three days after the onset of his symptoms. At the time of his examination, it was noted that there was abdominal distention, peristaltic gurgles, leukocytosis (13,000) but no masses could be palpated. The bubbles of gas lateral to the cecum are easily seen. (Fig. 12) Note that there are no serrations of the bowel wall, there is no spasm or demonstrable edema of the mucous membrane. The bowel of this patient seems to have lost its muscular tone and appears almost lifeless. This patient was operated upon and a large appendiceal abscess was found.

Summary

By way of summary, we may conclude that

1. Extrinsic benign lesions, when visualized, show a sharp smooth outline. The adjacent barium-filled colon is frequently displaced and usually shows no other abnormality.
2. Most extrinsic malignant and practically all extrinsic inflammatory lesions, when visualized, are seen as an area of increased density without

sharply circumscribed margins. The adjacent segment of bowel, when filled with barium, shows serrated margins, segmental rigidity, fixation and luminal narrowing. In the en face projection, the mucous membrane of the adjacent bowel appears normal in malignancy, while in inflammatory disease, the mucosal folds are elongated and thickened due to edema. Bubbles of gas outside the lumen of the bowel usually signal the location of an abscess.

3. Application of the above mentioned findings provide a method whereby one can locate and identify benign, malignant and inflammatory extrinsic lesions of the gastro-intestinal tract with a reasonable degree of accuracy.

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Homemade Tanning Mixture Harmless

A mixture of baby oil and tincture of iodine is an apparently harmless method for obtaining an artificial suntan, according to Dr. John M. Knox, a Houston dermatologist.

Although the homemade mixture may be used in the belief that it speeds suntanning, the iodine probably acts as a stain, Dr. Knox wrote in the question and answer section of the July 20th Journal of the American Medical Association.

He had observed no ill effects from use of the "home mixture" and there is probably

little or no absorption of the iodine through the skin. "The usual suntan is a response to injury from sunlight and is the body's way of protecting itself from additional injury."

"From a medical standpoint it is safer to use certain types of stains or dyes . . . than to obtain a true suntan. It must be remembered, however, that artificial stains do not provide protection against sunburn upon subsequent exposure to the sun. Such protection is only provided by naturally produced pigmentation."

SKF Fellowship—Haiti, 1962

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A young Virginia physician reports his fascinating experience in Haiti.

HAITI, the second oldest nation in the Americas, is a primitive but beautiful Caribbean country lying 500 miles southeast of Miami and occupying the western one-third of the island of Santo Domingo, between Cuba and Puerto Rico. Steep, five to seven thousand foot, intersecting mountain ranges which slope gradually to the sea, plateaus and small isolated valleys, form the rugged terrain. However, several very large (200-250 sq. mi.) coastal plains occupy a portion of the coastline. The total area (18,700 sq. mi.) is roughly equal to that of Maryland, but only 34% of this is suitable for farming. The remainder, because of topography, rainfall, soil character, etc., is nonarable. Because of primitive methods and ignorance of conservation techniques, yields from arable land are poor. Industry, except for some bauxite mining in the south, is virtually nonexistent. Sugar, sisal, rice, bananas, coffee, cocoa, and cotton are the principal crops. Having a population of four million, Haiti is the most densely populated country in the Western Hemisphere and is more overpopulated than India or China. When Haiti's light-green mountains are seen from the air, the population density is not apparent. But one has merely to set out on foot across the most isolated countryside to realize that he is nearly al-

EDITOR'S NOTE: Dr. Stringfellow is a 1962 graduate of The Medical College of Virginia. He spent the summer of 1962 in Haiti under a Smith Kline & French Foreign Fellowship awarded by the Association of American Medical Colleges.

ways within sight of people or thatched-roofed, mud huts. Over 85% of the population live in rural areas outside the towns and cities. Most families live on small plots or in clusters of huts, numbering from 50 to 100 persons. The illiteracy rate is 90%. Due to inadequate facilities, transportation problems, distance, and pressure of work at home or in the fields only 14% of school-age (5-14 years) children receive education. The annual per capita income of \$70 is misleading and elevated above the mean, since it reflects the great wealth of a small, very rich minority. Eight dollars yearly is closer to the purchasing power of the average peasant. Most Haitians grow, rather than buy, their food. They cultivate on small plots multiple crops of plantain (tasteless, green, cooking banana), red beans, cassava (a starchy root) yams, mango, and corn. Rice grown on the southern and Artibonite plains is an important component of most diets, especially when combined with red beans. Little meat or protein is consumed by the peasant, who, if he has chickens, a cow or a goat, prefers to sell them, so that he can buy a relatively greater quantity of food—starches and vegetables. Nutritional concepts are completely unknown to the average Haitian.

While realizing the inherent inaccuracy in generalization, let us briefly consider the "Haitian personality". They are futilely resigned to the adversities of fate. Calamities of weather, death, and even everyday misfortune are met with equanimity. Typically they display a sincerity and directness in interpersonal relationships. During the rainy-season floods in Limbé, great losses of property, livestock, and, sometimes, human life, are incurred. Rather than bewail their losses, however, the carefree, laughing adults and children wade through the muddy

water, visiting and comparing the depth of water in each others' homes. They laugh readily and seem always to find the humorous side of life. They are superstitious. It is not unusual for the native to blame his productive cough on a mango that fell off a tree and struck him on the head two weeks previously. Bananas are not eaten by many peasants in belief that the temperature of the fruit is cooler than that of the body, and that eating such a "cold fruit" will cause disease. Eggs are avoided because "they cause holes in the teeth". Many mothers blame illness in their children on the fact that the child "stole the breast" (attempted to breastfeed) after weaning, while the mother was asleep at night. Haitians are religious. Many practice voodoo, in which African pagan deities and symbolic rites are curiously intermingled with Christian concepts. To those who practice voodoo, it is not a mysterious cult characterized by the placing of a hex on one's enemy, but rather an important, practical aspect of daily living. Haitians are friendly and very hospitable. Every effort is made to make the visitor feel at ease and to supply his smallest need, even in the most modest of huts. The peasant is tranquil and slow to anger. Beatings and similar violence are unknown. Haitians are hard workers, rising with the sun and going to sleep at about 9 or 10 P.M. They spend nearly the whole day working in the hot sun, going home briefly to eat their main meal of the day in early afternoon.

Haitians are talented in music, art, and crafts. At the "Iron Market", the main commercial center of Port-au-Prince, can be seen evidence of Haitian handicraft, including woven goods, primitive paintings, and skillfully carved wooden figurines. The drum music of a voodoo gathering or of a "bamboche" (rural Saturday or Sunday night dance gathering) shows a strong African influence in its warm, monotonous rhythm.

Most roads in Haiti are very poor. The only paved highway in the country—to the North—is unpaved along many stretches, especially in the Artibonite Valley, where

it becomes impassable during rains because of axle-deep mud. Along the unpaved southern highway rains cause washouts and, at fording places, excessively deep water. Since most passenger and freight transportation is by road, these hazards are an economic handicap. Only heavy-duty vehicles and jeeps are rugged enough to withstand Haitian road-travel. A small proportion of the total area and the population of the country can be reached by road. Most homes are accessible only by narrow footpaths that dot the countryside.

There are no telephones in the country, but the remnants of a system established during the 1930's by the U. S. Marine Corps in Port-au-Prince can still be seen. Electric power is unpredictable outside of Port-au-Prince, where there is continuous service. Other towns and cities average about five hours of service daily, usually between 6 and 11 P.M. There is no rural electrification.

The first seven weeks of the Smith Kline & French Foreign Fellowship were spent at the West Indies Mission (WIM) Dispensary, three miles northeast of Cayes, which is located on the southern coast about 120 miles east of Port-au-Prince. The final three weeks were at the Hôpital Bon Samaritain, Limbé, 20 miles from the northern coast and 100 miles north of Port-au-Prince.

The WIM Dispensary is a unit of the Haitian division of the Mission. The West Indies Mission is an interdenominational Fundamentalist group with representation in Haiti, the Dominican Republic, Jamaica, Guadeloupe, Windward Islands, Trinidad, Tobago, Surinam, and Brazil. The Haiti mission is comprised of 25-30 missionaries. Most of them live with their families at "Cit  Lumiere", the mission compound near Cayes. A few work "in the field" among the Haitians. In addition to their work in evangelism, each missionary also has his own job in the mission complex. Thus, one person manages the business office, someone else the radio station, another the printing press, and so on. Wives and unmarried women missionaries serve as stenographers, laundry

director, teachers, nurses, pharmacists, etc. The compound is $\frac{1}{2}$ by 1 mile in size. Its 15 buildings include missionary residences, dispensary, office, bookstore, church and classroom building, radio station, dormitories, cafeteria, and printshop. In addition to Christian evangelism and medical care, the mission has an educational program. There are about 50 students enrolled in bible school, seminary, and as boarders who attend the Cayes public high school or lycée. The dispensary staff was made up of 18 persons. An American dentist visits for two weeks annually. There is a 12-bed ward for in-patients, treatment rooms, an operating room, autoclave, X-ray machine and dental equipment. There are 1500 patient visits monthly. A rural population of 150,000 to 200,000 is served, corresponding to a radius of 60 miles.

Haitian housing is typically unhealthy, with no sanitary facilities, and constant use of polluted surface water. Malnutrition is one of the major health problems, especially in children. Forty per cent of the deaths are due to infectious disease. It is estimated that only one out of two infants survives to age five years. The most common diseases are malaria, intestinal parasitosis, and tuberculosis. Tropical ulcer, tetanus, syphilis, and typhoid fever are also seen. Of course diseases common in the United States, like acute or chronic pyelonephritis and pneumonia are also seen. The more common intestinal parasitoses include amebiasis, trichuriasis, ancylostomiasis, strongyloidiasis, and ascariasis. It was thought by most physicians in Haiti that these diseases are more often secondary manifestations of reduced resistance due to some other primary process, such as malnutrition or malaria. Most malaria is of the falciparum variety, in which cerebral manifestations are common. The more common surgical procedures done in Haiti include trauma repair, appendectomy, tonsillectomy, herniorrhaphy, laparotomy (especially for pelvic neoplasia), and genitourinary procedures. Caesarean sections are often necessary. One American doctor who

had practiced in rural Haiti for some years stated that the best training for Haitian needs would include pediatrics and obstetrics.

The Creole language, a language derived chiefly from French but as dissimilar to it as modern Italian is to Latin, is simple and streamline. After about two weeks, one is able to express himself and to understand enough to carry on a reasonable conversation. Up to this point it is necessary to resort to French, gestures, and help from the English-speaking Haitian personnel in order to communicate.

My duties included observing and participating in the diagnosis and treatment of local diseases. After screening by the nursing staff, who diagnosed and treated routine cases, the more seriously ill and diagnostic problems were referred to the physician. After history, examination, and laboratory studies were completed, diagnosis was made and treatment begun. Follow-up appointments were given. Diagnostic problems or very ill patients were referred to the more extensive facilities of the government general hospital in Cayes. There was much opportunity for experience in surgical repair of trauma and in abscess incision and drainage. Several times daily I visited the laboratory to review the positive stool analyses and malaria smears. On several occasions we were asked to make emergency visits to see ill persons who lived in the vicinity. These patients were subsequently followed in the out-patient clinic when their condition improved enough to permit travel to the dispensary.

On Mondays I visited the local public health clinic, observing and assisting in the care of medical and pediatric cases. Here there was an opportunity for close work and exchange of ideas with the Haitian physicians. They were able to tell me a great deal about the diseases of their people. On Thursdays I made medical and surgical rounds with the attending physicians at the

Cayes general hospital. During these rounds we saw and discussed some of the more serious cases. The surgical ward always had many fracture cases. Falls from animals and from coconut or mango trees were quite common.

My work at the Hôpital Bon Samaritain was similar to that at the West Indies Mission. The hospital is operated by the American Baptist Home Mission Society. It had 17 beds, 16 pediatric cribs, and 12 maternity bassinets. Often, however, the pediatric ward has up to 25 patients, with the overflow using mats on the floor instead of beds. The hospital is staffed by 14 persons, all Haitian except for an American registered nurse and the hospital's director, Dr. William H. Hodges. In contrast to the WIM facility, located outside of town, the Limbé hospital is located within this town of 6000 population. A population of 100,000 is served. The hospital has three departments: outpatient clinic, maternity, and pediatrics. No major surgery is done, all emergencies being sent to the government hospital at Cap Haitien. Most elective surgery does not seem economically justified, so procedures considered elective are simply not done. The clinic runs four days weekly from 8 A.M. to 6 P.M. Records are kept on all patients. 70-80 patients are seen daily. Each patient is interviewed and fully examined. To facilitate diagnosis there is a laboratory with microscopes, centrifuge, and visual colorimeter. There is a 15 milliamp portable x-ray machine. Laboratory tests performed include complete blood count, urinalysis, Gram's and AFB stain, spinal fluid examination, malaria and marrow smears, stool for occult blood, ova, and parasites, and typhoid agglutination. During my stay there I saw about 18 patients daily in the clinic. A typical day at Limbé included the following clinic patients: 7 malaria; 2 kwashiorkor and malaria; 1 malaria and gastroenteritis; 1 malaria and retroauricular abscess; 1 malaria, lambliasis, and ascariasis; 1 bronchopneumonia and malnutrition; 1 gastroenteritis; 1 congestive heart failure (eti-

ology unknown); 1 malaria and essential hypertension. After seeing each patient, the history, physical findings, and suggested management were briefly presented for Dr. Hodges. He talked briefly with the patient or parent and checked the physical findings. Then he approved or criticized the proposed management. If the patient were to be admitted, it was my responsibility to help the laboratory technician with the laboratory studies and to do typing and cross-match if the patient needed blood. Patients admitted were followed and reviewed with Dr. Hodges. Two nights in succession we were called by the maternity ward to do version and extractions on shoulder presentations. Nights were free for reading or studying teaching slides in the laboratory. Living right behind the hospital, Dr. Hodges and I were available for emergencies at night.

Dr. Hodges is an expert on Haitian history and folklore. On Saturday or Sunday the whole family and any visitors visited points of interest including pre-Columbian Indian burial mounds, French colonial plantation ruins, pirate anchorages, and sites visited and described by Columbus during his Caribbean voyages. We made a trip to the magnificent Citadel of King Henri Cristophe built by 200,000 slaves over a 13 year period, but never used as a fortress against the expected French reinvasion which never came.

At both facilities I lived and boarded in the missionary homes. Meat was cheap at 18 cents a pound for beef. Fresh fruit of all sorts was plentiful. This made for very pleasant eating. The missionaries are remarkable in their energy, ingenuity, and ability to live relatively normally despite hardship and a lack of conveniences including continuous electricity and telephones.

Two interesting cases, both representing entities which are unusual in the United States deserve mention. Dominique, a 17-year-old male laborer at the West Indies Mission, presented with a one-week history of gradually progressive nausea, anorexia, fever, and generalized malaise. On the day

preceding admission he had had two shaking chills. He had had no immunizations. Physical examination revealed an oral temperature of 103 degrees F., pulse 75 and regular, and blood pressure 105/60 mm Hg. He appeared toxic and lethargic. Bilateral, scattered, fine, moist, inspiratory pulmonary rales were heard. There were 2 cm. hepatomegaly and 2 cm. splenomegaly. Slight tenderness was present on deep palpation of the abdominal right upper quadrant. No rigidity or point tenderness. Hypoactive bowel sounds and tympanitic abdominal percussion. Urinalysis: 3 + albuminuria, normal sediment. Hb 9.8 gms.%, 5600 WBC with normal differential. Malaria smear and stool for ova and parasites both negative. Widal agglutination revealed H and O antibody titers of 1:80. Initial impression was typhoid fever and the patient was placed on strict isolation, bedrest, forced oral fluids, and intravenous normal saline.

He received high doses (2.5 gm daily) of chloramphenicol initially, plus IM-methylprednisone. Repeat laboratory studies showed 1+ albuminuria and 4200 WBC with a normal differential. The patient continued to spike 103-104 degree temperatures each afternoon for three days. On the second day of treatment he appeared less lethargic and took oral nourishment. On the fourth day of treatment, temperature fell to normal limits, the rales disappeared, and the patient appeared much less toxic. Steroid therapy was discontinued and chloramphenicol reduced to 1 gm daily. Late during the second week of the illness, repeat Widal revealed H and O titers of 1:320 and 1:160, respectively. The patient received chloramphenicol for three weeks, at which time he was discharged improved. He returned to work and did not relapse.

The second case is that of a three year old male admitted to the Hôpital Bon Samaritain with a two week history of generalized swelling. The child had been weaned early (following local custom)—at age six months. Since that time his diet had consisted of rice and various starches, with little

or no protein. For three months preceding admission the mother noted increased irritability, depigmentation of skin and hair, and hair loss. Two weeks prior to admission and shortly after the onset of an upper respiratory infection, there developed swelling of the abdomen, extremities, and face, fever, diarrhea, large blisters on the lower extremities, and "cloudiness" of the eyes. Admission physical revealed pulse 110 and regular, rectal temperature 102.5 degrees F., height 37½ inches, weight 42 lbs. The patient was crying loudly and there was marked anasarca. Isolated and confluent bullous lesions, some raw and weeping, were seen behind the ears and over the lower calves. Hypopigmented skin and hair, with slight alopecia and increased brittleness of the hair. Corneas were dull and wrinkled bilaterally; muddy, injected sclerae were noted. Scattered inspiratory and expiratory, pre- and post-tussive, medium moist rales. Slight percussive dullness over both lung bases. Protuberant abdomen with 3 cm hepatomegaly. Fluid wave and moderate shifting dullness. Generalized pitting edema of extremities, trunk, and face (marked eyelid edema.) Laboratory studies revealed 1+ albuminuria, Hb 5, WBC 15,700 with 88% polys, 10 lymphs, 2 monos and a shift to the left. Total protein 1.4 gms.%. Sputum smear—many Gram positive diplococci and neutrophils. Bilateral patchy infiltrates on chest film. Initial impression was 1. Severe kwashiorkor; 2. Bronchopneumonia, pneumococcal; 3. Xerophthalmia—hypovitaminosis A; 4. Falciparum malaria. Treatment consisted of bedrest, high-protein (milk, eggs, meat, and beans) diet, chloroquine phosphate 2 c.c. IM followed by 250 mg. p.o. daily for three days, procaine penicillin 300,000 u. daily 50,000 u. vitamin A daily for three days, and 125 c.c. whole blood. In five days the pneumonia cleared and the patient had become afebrile. He lost weight, became less irritable, and his appetite improved. The corneas regained their sheen and the sclerae cleared. There was beginning healing of the skin lesions. Skin and hair color returned. After 10 days of hospitali-

zation his weight was 31 pounds and there was no pitting edema. At the end of two weeks he was discharged, much improved.

My visit to the Hôpital Albert Schweitzer, founded and administered by Dr. W. L. Mellon, Jr., at Deschapelles, was a very interesting experience. This modern facility seems incongruous in Haiti. It is the best equipped medical institution in the country. It is said that a minimum of nine such hospitals are necessary to begin to meet the country's need. This 100-bed hospital has an excellent operating suite, a large laboratory, and a busy outpatient clinic. Unfortunately only those who live in the surrounding area are eligible to receive care. Besides the full-time staff of 8-10 United States and Haitian physicians, American specialists serve as visiting physicians from time to time. For example three times a year there is a "bone week", when the orthopedic cases collected in the previous four months are operated upon. In conjunction with the hospital there is a community development project whose purpose is the improvement of educational, agricultural, and home conditions. During my visit I made rounds on the pediatric and surgical services, participated in the medical clinic, toured the facility and talked with the personnel, including Dr. Mellon.

On another occasion I visited the government general hospital in Port-au-Prince. It is a white stucco group of buildings built around a central court. The wards are large, airy, and unscreened. In conversing with the housestaff I was favorably impressed by their knowledge and the apparent caliber

of medicine, despite a lack of modern equipment and diagnostic aids.

The best medicine practiced in Haiti by Haitians is in the government hospitals and outpatient clinics. A serious problem is that there are too few doctors for the population. For political, economic, and professional reasons many physicians, scientists, and other educated persons are leaving Haiti. They are attracted to areas of the world where the true need for them is less than at home. There is a great lack of specialists. In the southern province, with a population of one million, there were one board-certified American surgeon and a Haitian physician with one year's training in surgery in the United States. Another problem affecting Haitian medicine has a social origin. Class distinction, inherited from French colonialism, is a strong force in Haitian life. Many Haitian physicians in private practice refuse to care for indigent patients. So the peasant is forced to seek assistance in the overcrowded government and missionary facilities.

The fortitude, ingenuity, and clinical prowess of the Haitian and American physicians who practice medicine in this squalid but strangely beautiful country deserve respect and praise. Having been able to see this work, study the local diseases, and observe the Haitian culture was gratifying experience never to be forgotten.

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Mental Health....

ESTHER N. La ROSE
DOROTHY O. POST

Psychiatric Aspects of Weight Control

The Augusta County Home Economics Extension program in cooperation with the V.P.I. Extension Service has conducted a medically approved weight control program each year since 1959 following an initial group in 1954. (Approved by the Virginia Council on Health and Medical Care and the State Department of Health.) Approximately 150 women have attended part or all of past group meetings. This program has been sponsored by the Augusta County Nutrition Committee since its inception in 1958.

In 1963, this committee sought the cooperation of the staff of the Valley Mental Health Center and the Health and Welfare sub-committee chairman of the Rural Areas Development Board, in addition to representatives of the press and radio. At the annual dinner meeting of the Nutrition Committee arranged by the Shenandoah-Rappahannock Dairy Council, the group representatives planned to emphasize and study ways of helping women who had failed to retain weight loss in previous attempts or had dropped out after attendance at only a few meetings.

As part of the 1963 weight control campaign, a series of seven radio programs were prepared and duplicated for each of the four Augusta County radio stations. Weekly press articles covering the same subject matter were included in two daily papers at Staunton and Waynesboro. Dr.

LA ROSE, ESTHER N., A.B., M.S., *Home Demonstration Agent, Staunton.*

POST, DOROTHY O., MSSW, ACSW, *Chief Psychiatric Social Worker, Valley Mental Health Center, Staunton.*

Preliminary report of a cooperative project of a mental health center and a home economics extension program in the interest of weight control.

Approved for publication by Commissioner, Department Mental Hygiene and Hospitals.

Bernard Kasinoff, Director of the Valley Mental Health Center, had a radio interview with Mrs. La Rose regarding the emotional aspects of weight control on one of these programs. Radio Station WTON cooperated in making the master tapes and V.P.I. Radio Department duplicated the tapes.

The general organization of the Weight Control Group required that women of Augusta County, Waynesboro and Staunton desiring to lose weight make application to the Home Demonstration Agent and receive a physical examination blank. This blank, signed by the family physician, was required for admission to the group. The only other requirement was that applicants use the literature provided them regarding calories, determine the number of calories on which they could lose weight and commit themselves to attending a report meeting twice a month. At these meetings, the Home Demonstration Agent arranged for informative lectures, movies and discussions of weight control problems and recorded their starting weight and weight loss as it progressed.

At a second meeting of the 1963 group, twenty women, eleven of whom had been in past groups, met with the Psychiatric Social Worker of the Valley Mental Health Center. She discussed emotional factors in weight control and explained the group therapy plan as a means by which individuals could gain insight regarding factors influencing eating habits. Eight women who had failed to retain weight loss over a period of years volunteered to regular weekly attendance at group meetings with a therapist (Psychiatric Social Worker) at the Valley Mental Health Center. As this was a pilot project, the Home Demonstration Agent was a member of the group and she and the

social worker frankly spoke of their own weight problems as the group discussions progressed.

During the period from February 28, 1963, through May 23, 1963, the membership of the therapy group was consistent. The total weight loss desired was 219 pounds, and the range was from 15 pounds to 50 pounds, with one member needing to lose 50 pounds; one 40 pounds; one 30 pounds; three 20 pounds; and two 15 pounds, to achieve the normal weight recommended by their physicians. The importance of attendance was stressed and the average attendance at the meetings was six. The highest attendance was at the first three meetings with the lowest attendance at the fifth meeting. There were two widows and six housewives in the group and three members had part-time employment outside the home.

From an emotional point of view, one member was depressed to the point of making a poor adjustment within her family group. One member was suffering from anxiety which resulted in severe stomach spasms. Both of these members were on medication prescribed by their family physicians and were unable to discipline themselves to the requirements of dieting. Three members were making good social adjustments because of easy-going dispositions, but recognized a physical propensity to gaining. Two of these were from family groups in which rapid gaining after childbirth was expected and accepted. One of these thought that her childhood experiences caused her to eat anxiously, but by keeping a daily chart, she learned that her gaining had a regular pattern not associated with her menstrual cycle. Following this, tests done through her family physician indicated that her rapid weight gain was due to a low thyroid condition. One member suffered severe fatigue in the early weeks of dieting and was guided toward further medical examinations that resulted in operative procedures that were not severe because of early detection of the difficulty. Two

members were in healthy physical condition, but lived in family situations in which they were exposed to emphasis on eating of rich food. They recognized their need for support outside the family group in order to lose weight.

In the early meetings of the group, the discussions centered around information about calories and talk about the family concepts regarding food in which members had been reared. The influence of parental ideas such as, "better pay a food bill than a doctor bill", "we may be poor, but we have plenty of food on the table", "no fat, no lean", were discussed as attitudes, unconsciously influencing eating habits. Several felt they had been influenced by parental attitudes about the "clean plate". Since the age range was from 29 to 60, there was a great deal of discussion of the increase in severity of the problem as age advances. "The hungry feeling" was referred to in each meeting with members offering suggestions for appeasing it. Food fads, diet plans, notions about eating were talked about at each meeting and by the fourth meeting, husbands' attitudes, anxieties about personal conflicts and depressed feelings were expressed and responded to by group members. Following some of these sessions, individual members stayed on for a time talking with the therapist about their feelings. The therapist participated actively with the group in the first six meetings and direction was given where necessary to keep the situation from becoming social intercourse between two members or when several members were talking at the same time. In the early meetings, this direction was in the form of explanation of the difference between a social group and a therapy group. The therapist considered her function to be that of guide from talk about information to expression of feeling and that of assistance with the handling of feeling when necessary.

At an evaluation meeting on May 23, 1963, members expressed feelings about the group plan of losing weight as follows: "I

was all alone with my weight problem before I came to the group"; "I was worried about my heritage of heart trouble before I came to the group, now I know better how to live with it." "It was such a relief to find out about the causes for my special problem with weight." "The group has made me realize my loneliness." "Since being in the group, I don't irritate my husband with diet talk." The group agreed that where there is a special problem, participation in the group is more helpful than listening to lectures of a general nature. Several members indicated that talking about calories helped them to memorize food values. Several said that in order to

make a weight program to suit personal needs, the individual has to find answers to his personal questions as they are expressed in the group.

From the therapist's viewpoint, the depressed member has begun counting calories and is consistently keeping a weight chart; three members have sought needed medical attention; three members have responded to supportive help and all members have lost at least ten pounds individually. Five members of the group voted to continue weekly through the summer months and three members have been added to the group that began meeting on June 5, 1963.

Home Safety

Home Sweet Home, that supposed pillar of sanctuary, is the site of more injuries each year than our nation's highways. On the average, about 26,000 Americans are accidentally killed in their homes each year and four million are injured.

Most of these injuries and deaths occur through falls—particularly among older people. Of the 11,800 persons who died from falls in their homes in 1961, 10,100 were age 64 and over. For the most part, these falls among older people occur at floor level—not from high places such as a ladder or roof. And in general they are easily preventable. When you can answer yes to the following questions, then you have set the pattern for safety proofing your home against accidents of the aging.

- Do you have scatter rugs—those bright and cheerful magic carpets of death—fastened securely or provided with non-skid backing?

- Do you have handrails of a proper height and strength on all stairways and steps and by the bath tub and commode?

- Do you have for yourself or for visiting old people a comfortable, safe, stable chair with sturdy arms that can support the weight of a person pushing himself to his feet?

- Do you have a light switch by the bed and flashlights at all needed areas; and are your lights bright enough to compensate for the dimmer vision of older eyes?

- Do you know, and if so, do you make use of the knowledge, that older people should sit a moment on the edge of the bed before rising; that they should stand still an instant after coming to their feet to prevent any accidents from possible dizziness?

- Do you know that a clean, orderly house, as free as possible of things to trip over, makes for the safest home for people of all ages?

Diagnostic Laboratory Medicine . . .

Agglutination Reactions in Rheumatoid Arthritis

During the past 15 years a large number of agglutination reactions have been described and utilized in the evaluation of serologic abnormalities in rheumatoid arthritis and as aids in the diagnosis of this disease. All of these procedures depend upon the presence in the sera of most patients with rheumatoid arthritis of a factor or factors capable of agglutinating certain particulate bodies previously coated, generally either by adsorption or by the mechanism of an antigen-antibody bond, with human or rabbit gamma globulin. The rheumatoid factor has been shown by ultracentrifugation to be a high molecular weight (19S) gamma globulin which is capable of combining specifically with 7S gamma globulin to form a 22S complex and which apparently exists in the serum in form of such a complex. Agglutination by rheumatoid sera is not specific for any one particular body but appears to result from a reaction, having the characteristics of an antigen-antibody reaction, between the rheumatoid factor and a 7S gamma globulin attached to the surface of the particular body used as an indicator. A recent study suggests that many rheumatoid sera contain not one but three types of factors, one capable of combining with human gamma globulin only, one with rabbit gamma globulin only and one with either.

Most of the systems now in common use differ from one another, in the particulate indicator used and/or in the sensitizing gamma globulin. The following four systems are among those that have been used more frequently or more thoroughly evaluated in recent years:

<i>Indicator</i>	<i>Sensitizing gamma globulin</i>
1. Sheep erythrocytes	Rabbit anti-sheep cell antibody
2. Latex particles	Pooled human gamma globulin
3. Bentonite particles	Pooled human gamma globulin
4. Human Rh-positive erythrocytes	Human incomplete anti-Rh-positive antibody

Modifications of the sensitized sheep cell method are generally felt to be less sensitive (65-75% positive tests with known rheumatoid sera in comparison with 75-90% positive tests using the other methods) and to yield a lower percentage of "false positive" reactions (generally less than 2 or 3%) than the other methods (approximately 3-5%). It should also be emphasized that the high incidence of positive reaction generally reported is in patients with classical rheumatoid arthritis and the incidence in patients with "possible-probable" disease is considerably less. Because of the difficulty of an early clinical diagnosis and perhaps also because of the lack of published follow-up reports in these cases, the significance and reliability of the tests in such cases cannot be stated with certainty. In the classical disease, however, there seems to be no clear-cut relationship between the incidence of positive tests and the duration of the disease. On the other hand, in most series the incidence of positive tests and the titer do seem to be related to the severity of the disease.

An incidence of positive results higher than that seen in "normal" controls has also been reported in conditions other than rheumatoid arthritis such as: disseminated lupus erythematosus, other collagen diseases, hypergammaglobulinemia, macroglobulinemia, and infectious hepatitis. Positive tests have been reported in as high as 30 to 40% of patients with LE. A high incidence of positive reactions has also been found in juvenile rheumatoid arthritis while the incidence in ankylosing spondylitis without peripheral joint involvement and in psoriasis associated with arthritis is only slightly higher than that in controls.

R. BECK, M.D.

MACK I. SHANHOLTZ, M.D.

State Health Commissioner of Virginia

Proposal for General Medical Clinic and Home Nursing Services

The National Health Survey has shown that nearly half the population has some form of chronic illness. While chronic disease is by no means limited to the elderly, the prevalence of chronic disease varies with age, becoming more frequent in the older age groups. In many cases, this condition is not incapacitating and the individual is able to live a normal life. In other instances, activity may be partially or totally limited.

In 1900, less than four percent of the population of Virginia was over sixty-five years of age. Today, over seven percent has reached this age, and projections indicate a further increase to over ten percent by 1970. It is estimated that 225,000 of these have some chronic disease and that over 100,000 have limitation of their major activity.

Many of these individuals are being hospitalized or placed in a nursing home unnecessarily because there is no provision for medical supervision in their homes. In many cases, the type of nursing care being given in the institution is minimal and could be performed by members of the family or neighbors under the supervision of a public health nurse. In other cases, the individual may not be receiving the necessary medical care because of limited finances or lack of understanding of the importance of proper medical care. Providing medical supervision and home nursing care to these individuals would not only maintain them in a better level of health but would promote a greater degree of mental well-being. Even though the patient desires and can afford home nursing services, these services are not always available. In Virginia, only twenty-five percent of the population lives in metropoli-

tan areas where home nursing service is available.

The State Department of Health proposes that a number of general medical clinics providing home nursing services be established in selected areas throughout the State of Virginia, initially as a demonstration, eventually to provide services to all who need them.

The purposes of these clinics would be:

(1) To supplement the resources of the private physician in providing comprehensive medical supervision to eligible individuals whose medical needs can be satisfactorily met in this fashion.

(2) To furnish care in the home for selected types of patients.

(3) To reduce the cost of illness by shortening the hospital stay or by the prevention of hospitalization or re-hospitalization of selected patients who can receive comprehensive care in the home.

(4) To improve utilization of hospital bed facilities.

(5) To expedite recovery, promote a better sense of well-being, and maintain personal dignity by restoring patients to normal family living as quickly as possible.

A general medical clinic is very similar in purpose and medical care capabilities to a general practitioner's office. It is designed to:

(1) Provide preventive, diagnostic, and therapeutic medical services to the indigent and medically indigent.

(2) Provide necessary follow-up supervision of patients discharged from hospitals; general, mental, tuberculosis, et cetera.

(3) Coordinate medical care services in the community.

Clinic referrals will be accepted from private physicians, hospitals or clinics, and

various official agencies. Medical indigency as a prerequisite for referral will be determined by the referral agency since the health department does not have social workers to make this determination. Patients with disease conditions requiring emergency care will not be accepted.

The patient will be visited by a public health nurse who will obtain as complete a medical and social history as possible. Proper management of these cases will require consideration of all medical, social, and economic conditions. It is important that this information be available to the physician from the beginning.

At the clinic the patient will be examined by a qualified physician who may be paid a fee for his services. If indicated, the patient will be referred to the nearest available hospital laboratory for necessary laboratory examinations. When the diagnosis has been established, the patient will be followed at the clinic at the necessary intervals for proper control of the disease.

In many instances, it will be unnecessary for a patient to be seen by a physician except at certain times, provided some nursing supervision can be given in the interim. As part of this program, public health nurses will visit the patient in the home as directed by the physician and carry out all necessary and prescribed nursing procedures.

In the home, the patient and his family will be taught proper nursing procedures to follow. The nurse will supervise the patient's care on a continuing basis and will provide such nursing service as cannot be provided by those in his home. She will be able to insure that the patient on long-term drug therapy does not gradually discontinue medication or take it intermittently.

When necessary, she will be assisted by a physical therapist, nutritionist and other personnel. In certain selected areas, it is anticipated that licensed practical nurses will

be available to assist the public health nurses in their care of the patients.

It is expected that a typical clinic will require the addition of two public health nurses and one clinic aide to the staff of the local health department. The clinician and laboratory will be reimbursed on a fee-for-service basis.

To begin this program, sufficient funds are being requested from the General Assembly to institute twenty of these clinics during the 1964-1966 biennium. During the initial stage, the entire operation would be at State expense. At the end of the biennium, it is anticipated that local governing bodies will approve the operation of these clinics under the formula system used to determine the relative share of local health department operating costs.

Prior to the establishment of the program in any area, evidence of local support must be presented. For the program to effectively serve the community, the local physicians must not only approve but actively support it. Presentation of the proposed project will be made to members of the local medical society so that they may study it before any vote is necessary. A full explanation of the needs of the community and the part to be played by local physicians will be given each practicing physician in the area.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE
DISEASE CONTROL

	July 1963	July 1962	Jan.- July 1963	Jan.- July 1962
Brucellosis	0	2	3	10
Diphtheria	0	2	0	8
Hepatitis	37	53	581	852
Measles	384	326	7902	9098
Meningococcal Infections ..	6	3	69	46
Aseptic Meningitis	2	5	17	16
Poliomyelitis	0	1	2	3
Rabies (In Animals)	8	13	128	94
Rocky Mt. Spotted Fever ..	10	6	20	19
Streptococcal Infections ...	295	298	6387	5077
Tularemia	1	3	6	11
Typhoid Fever	0	4	5	12

PRELIMINARY PROGRAM

116th MEETING

The Medical Society of Virginia

HOTEL ROANOKE
ROANOKE
October 6-9

PRELIMINARY PROGRAM

116TH MEETING

THE MEDICAL SOCIETY OF VIRGINIA

HOTEL ROANOKE

ROANOKE, VIRGINIA

OCTOBER 6-9, 1963

Sunday, October 6

9:30 A.M.

COUNCIL

Parlor D

1:00 P.M.

House of Delegates—Luncheon Meeting

Ballroom

Monday Morning, October 7

9:00 A.M.

Ballroom

Welcome and Preliminary Announcements—John A. Martin, M.D., Chairman, Local Committee on Arrangements

Memorial Service

Scientific Program

James M. Moss, M.D., Alexandria, Presiding

9:05 A.M.—CERTAIN PATHOPHYSIOLOGIC PRINCIPLES OF GASTRIC FREEZING—Thomas D. Davis, Jr., M.D., William A. Johns, M.D., and Otis W. Doss, Jr., M.D., Richmond

The etiology of peptic ulcer disease remains an enigma as does satisfactory medical and surgical management. Gastric freezing offers a new approach to the correction of mucosal dysfunction thought to be responsible for ulcerogenesis. The indications, contraindications and iatrogenic pathology will be reviewed along with a brief explanation of technique, hazards and results.

9:20 A.M.—A PAINLESS AND BLOODLESS METHOD FOR DIAGNOSIS OF PERICARDIAL EFFUSION—V. Eric Kemp, M.D., Richmond

The differentiation of generalized cardiomegaly from pericardial effusion is a common and frequently difficult problem. In 1961, Jorgens and Kundel described a radiographic approach which we have employed with reliability, virtually no risk to the patient and not requiring injections or hazardous manipulation of the patient. Motion pictures demonstrating this technique and its correlation with other means of diagnosis will be shown.

9:35 A.M.—THE CORRECTION OF VENTRICULAR FIBRILLATION ON THE MEDICAL WARDS—WITH A REPORT OF FIVE CASES—Armistead D. Williams, M.D., Williamsburg, Charles F. Ballou, III, M.D., Clifton Forge, and Allen E. LeHew, M.D., Clifton Forge

Improvements in electrocardiography and resuscitation have made it possible to detect and correct ventricular fibrillation on the medical wards. This paper emphasizes facets of revival that we have found particularly important, e.g., readily available proper equipment; schooling and nursing staff; proper methods of lung ventilation and dangers in using external cardiac massage and countershock.

9:50 A.M.—UNILATERAL BONY ORBITAL INJURY INVOLVING THE MAXILLARY SINUS—John A. Gill, M.D., Richmond

Two types of orbital injury involving the maxillary sinus are discussed: (1) those involving the orbital rim, and (2) those not involving the orbital rim. The common result of these two injuries is diplopia due to resultant increase in size of the orbital cavity through its encroachment on the maxillary sinus. Cases demonstrating the two types of injury are reviewed.

10:45 A.M.—THE SYMPTOMOLOGY AND FOLLOW-UP RESULTS OF 165 SURGICALLY TREATED HIATAL HERNIAS—Marcellus A. Johnson, III, M.D., Roanoke

This will be a discussion of 165 hiatal hernias that the author has seen and operated upon in the past eleven years. The various types of presenting primary

symptoms will be tabulated. Radiological and clinical follow-ups of these patients will be shown on slides. Criteria of operation will be discussed on the basis of results obtained on these patients.

10:20 A.M.—THE CERVICAL SYNDROME—John S. Thieme, Jr., M.D., Norfolk

The cervical syndrome or "whiplash" has been very popular in medico-legal circles these past 5-10 years, but it is only recently that sufficient patients have been seen over an adequate period of time to permit significantly evaluation of the end result of this syndrome. Over 300 patients presenting this syndrome are here reviewed, many of which have been followed well over a five-year period and a summary of the end results is presented.

10:35 A.M.—Intermission to visit exhibits.

11:00 A.M.—CYTOLOGY AND ITS PRACTICAL CLINICAL APPLICATIONS—Clifford H. Fox, M.D., Charlottesville

The clinician may obtain valuable information regarding the diagnosis and subsequent care of his patient from cellular studies. A review of the methods involving various body systems will be presented.

11:15 A.M.—CHRONIC BRONCHITIS—John L. Guerrant, M.D., Charlottesville

Chronic bronchitis is a slowly progressive disease leading to prolonged disability and death. It is manifested by cough and sputum. It seems to be caused by cigarette smoking and recurrent bacterial infections, and must be differentiated from bronchiectasis, tuberculosis, lung tumors, and other serious respiratory tract diseases.

11:30 A.M.—UNRECOGNIZED COAGULATION DEFECTS AS A CAUSE OF POST-OPERATIVE HEMORRHAGE—Burness F. Ansell, Jr., M.D., Charlottesville

The dangers arising from blood loss during or after surgery have been reduced by the availability of whole blood. However, occasional episodes of uncontrollable hemorrhage still occur due to an unrecognized coagulation defect. Every effort must be made to discover such defects as proper preparation will reduce the operative risk. The history is the most important single study and will serve as a guide to laboratory procedures which will enable the physician to make an appropriate diagnosis and institute corrective therapy.

11:45 A.M.—THE UNSATISFACTORY FACIAL SCAR—C. C. Coleman, Jr., M.D., Charlottesville

Injuries of the face produce permanent defects if they are improperly repaired. Malaligned eyelids, nostrils and lips frequently are the results of inappropriate methods of repair at the time of emergency surgery. Despite all efforts at plastic revision of such scars, the end result is seldom adequate from our standpoint. Methods of revision will be adequately demonstrated and discussed.

12:00 Noon—THE DIAGNOSIS AND TREATMENT OF BRAIN ABSCESS—William M. Eagles, M.D., and Robert P. Singer, M.D., Richmond

The successful management and lowered mortality of brain abscess is directly related to improved means of localization of the abscess. The contribution of antibiotics, brain scan, "Thorotrast" instillation, arteriography, and electroencephalography will be discussed.

12:15 P.M.—*Guest Speaker*—Edward J. Schowalter, M.D., President-Elect, Industrial Medical Association, New York City—INDUSTRIAL MEDICINE—ITS IMPORTANCE AND INTEREST TO YOU

Dr. Showalter has been obtained through the cooperation of the Virginia Industrial Medical Association.

Monday Afternoon, October 7

See special section on luncheons, committee meetings and special events.

3:00 P.M.

Reference Committee #1—Pine Room

Reference Committee #2—Parlor D

Tuesday Morning, October 8

9:00 A.M.

Ballroom

Snowden C. Hall, Jr., M.D., Danville, Presiding

SYMPOSIUM ON EMERGENCIES

This program has been designed to emphasize those emergencies more frequently encountered in the categories listed below. The differential diagnosis and treatment will be stressed.

Planned with the cooperation of the Virginia Academy of General Practice, this symposium has been approved for six hours of Category I credit by the American Academy of General Practice.

9:00 A.M.—*Invited Speaker*—H. Page Mauck, M.D., Assistant Professor of Medicine, Medical College of Virginia, Richmond—MEDICAL CARDIAC EMERGENCIES

9:20 A.M.—*Guest Speaker*—Paul C. Adkins, M.D., Associate Professor of Surgery, George Washington University School of Medicine, Washington, D. C.—TRAUMATIC CARDIAC EMERGENCIES

9:40 A.M.—*Guest Speaker*—John B. Pfeiffer, Jr., M.D., Associate Professor of Neurology, Duke University School of Medicine, Durham, North Carolina—NEUROLOGICAL EMERGENCIES

10:00 A.M.—*Guest Speaker*—Ivan Willard Brown, Jr., M.D., Professor of Surgery, Duke University School of Medicine, Durham, North Carolina—TRANSFUSION AND RESUSCITATION IN THE SEVERELY INJURED

10:30 A.M.—Intermission to visit exhibits

10:50 A.M.—*Invited Speaker*—Yale H. Zimberg, M.D., Chief, Surgical Service, Veterans Administration Hospital, Richmond—SUDDEN OCCLUSION OF THE MESENTERIC AND RENAL VESSELS

11:10 A.M.—*Invited Speaker*—Charles W. Byrd, M.D., Clinical Associate Professor of Surgery, Medical College of Virginia, Richmond—EMERGENCIES OF THE UPPER GASTROINTESTINAL TRACT

11:30 A.M.—*Invited Speaker*—Gardner W. Smith, M.D., University of Virginia School of Medicine, Charlottesville—EMERGENCIES OF THE LOWER GASTROINTESTINAL TRACT

11:50 A.M.—Panel discussion—featuring written questions from the floor. Owen Gwathmey, M.D., Richmond, Moderator

12:15 P.M.—Recess for lunch

Tuesday Afternoon, October 8

2:00 P.M.

Ballroom

Thomas S. Edwards, M.D., Charlottesville, Presiding

CONTINUATION— SYMPOSIUM ON EMERGENCIES

2:00 P.M.—*Guest Speaker*—Jack R. Ewalt, M.D., President, American Psychiatric Association, Boston—ACUTE PSYCHIATRIC PROBLEMS

2:30 P.M.—*Invited Speaker*—George R. Minor, M.D., Associate Professor of Surgery, University of Virginia School of Medicine, Charlottesville—PULMONARY EMERGENCIES—Dr. Minor obtained through cooperation of Virginia Chapter, American College of Chest Physicians

2:50 P.M.—*Invited Speaker*—William E. Laupus, M.D., Professor and Chairman, Department of Pediatrics, Medical College of Virginia, Richmond—NEONATAL EMERGENCIES

3:10 P.M.—*Invited Speaker*—J. Edward Hill, M.D., Assistant Clinical Professor of Urology, Medical College of Virginia, Richmond—UROLOGICAL EMERGENCIES

3:30 P.M.—*Invited Speaker*—Herbert A. Claiborne, Jr., M.D., Assistant Clinical Professor of Obstetrics and Gynecology, Medical College of Virginia, Richmond—GYNECOLOGICAL EMERGENCIES

3:50 P.M.—Panel discussion—featuring written questions from the floor. Robert L. Cassidy, M.D., Culpeper, Moderator

Wednesday Morning, October 9

9:00 A.M.

Ballroom

James M. Moss, M.D., Alexandria, Presiding

9:00 A.M.—SURGICAL THERAPY OF THE NODULAR THYROID—Richard H. Egdahl, M.D., Richmond

Measures for selecting patients with thyroid nodules for surgery will be discussed. A pathological classification of thyroid carcinoma will be given, with suggestions concerning the use of frozen section in thyroid surgery. A surgical approach to the various types of thyroid carcinoma will be presented.

9:15 A.M.—RESULTS OF ABLATIVE PROCEDURES FOR RECURRENT AND INOPERABLE BREAST CARCINOMA—E. Meredith Alrich, M.D. and Peter Hairston, M.D., Charlottesville

In 157 patients with advanced or recurrent breast cancer seen at the University of Virginia Medical Center, one or more of the endocrine ablative procedures have been performed. These include therapeutic oophorectomy, adrenalectomy, and hypophysectomy. This paper is a statistical analysis of these patients, and illustrates that a significant number of patients with advanced mammary cancer can be benefited by this alteration in their hormonal status.

9:30 A.M.—Tietze's Syndrome—William D. Byrne, M.D. and Albert Iben, M.D., Falls Church

In 1921, Tietze described a painful, nonsuppurative swelling of one or more of the costal cartilages. Three cases are reported in which the costal cartilage has been completely removed. In these the cartilage itself was not diseased but appeared to be buckled forward. This may be due to contraction of the ligaments lying immediately behind the cartilage. Excision of the involved cartilage will confirm the diagnosis and cure the disease. Particularly important is the exclusion of benign and malignant tumors of the cartilage.

9:45 A.M.—HepatosiS of Pregnancy—Alfred L. Wolfe, M.D., Roanoke

HepatosiS of pregnancy is a relatively rare cause of generalized icterus during pregnancy. It occurs late in pregnancy and is characterized by the onset of profound itching about the 5th or 6th month of pregnancy with the subsequent development of jaundice. Both then remain until after delivery of a non-icteric, healthy child, when the itching abates almost immediately and the icterus by 7 to 10 days. Liver biopsy shows hepatic findings similar to those of thorazine or methyltestosterone jaundice. The clinical findings are as stated above. Otherwise, the patient feels well.

10:00 A.M.—The Surgery of Obesity—Jerome E. Adamson, M.D., Hugh H. Crawford, M.D., and Charles E. Horton, M.D., Norfolk

The multiple techniques which are available to reconstruct the deformities associated with fat deposits are reviewed in some detail. Illustrating diagrams and pre- and post-operative photographs are included in this discussion to explain the surgical aids in the treatment of a difficult problem. Newer techniques of lipectomy of the face, neck, arms, breast, abdomen, buttocks, hips and thighs are presented.

10:15 A.M.—The Conservative Treatment of Fractures of the Lumbodorsal Spine—Tillou Henderson, M.D., Richlands

This is a statistical paper comparing the results of two large series of cases of fractures of the lumbodorsal spine. One group was treated by the conventional method of hyper-extension body casts, and the other without immobilization of any kind.

10:30 A.M.—Intermission to visit exhibits

10:45 A.M.—Epiphyseal Stapling to Control Leg Length Growth—Virgil R. May, Jr., M.D., and Ernest L. Clements, M.D., Richmond

A review of the control of leg length in children over the past thirteen years is presented. Prior to 1957, stainless steel staples were used. The new staples which have been used since then are vitallium. Experiences with both are related. The amount of growth control is shown.

11:00 A.M.—*Invited Speaker*—James B. Littlefield, M.D., Associate Professor of Surgery, University of Virginia School of Medicine, Charlottesville—CURRENT TRENDS IN CARDIAC SURGERY

A summary of present trends in cardiac surgery, including total valve replacements, creation of pulmonic stenosis, use of assisted breathing units, and definitive surgical treatment of other acquired and congenital cardiac lesions.

11:30 A.M.—*Invited Speaker*—David M. Hume, M.D., Professor and Chairman, Department of Surgery, Medical College of Virginia, Richmond—CURRENT STATUS OF CLINICAL ORGAN TRANSPLANTATION

12:00 Noon—VaMPAC—An explanation and report about the activities of the Virginia Medical Political Action Committee.

SPECIAL EVENTS

Sunday, October 6

Virginia Society of Anesthesiologists

Committee meetings—Parlors E and F—9:00 A.M.

Business meeting—Parlor F—10:15 A.M.

Social hour—Parlor E—12:00 Noon

Luncheon—Parlor F—12:45 P.M.

Program—Parlor D—2:00 P.M.—*Guest Speaker*: Dr. William S. Howland, Head, Section on Experimental Anesthesia, Sloan-Kettering Institute, New York

Council Meeting, The Medical Society of Virginia
Parlor D—9:30 A.M.

House of Delegates, The Medical Society of Virginia
Luncheon meeting—Ballroom—1:00 P.M.

Virginia Academy of General Practice
Board meeting—Parlor D—7:30 P.M.

Virginia Radiological Society
Business session—4:30 P.M. To be followed by dinner

Monday, October 7

VaMPAC

Board of Directors—Breakfast—Parlor D—7:30 A.M.

General session—Ballroom—2:30 P.M.

Virginia Diabetes Association
Breakfast—Virginia Room—7:30 A.M.

Virginia Society of Internal Medicine
Executive Committee—Breakfast—Parlor F—7:45 A.M.

Membership meeting to follow meeting of Virginia Section, American College of Physicians (Ballroom)

Virginia Section, American College of Physicians
Luncheon—Ballroom—1:00 P.M.

Virginia Academy of General Practice
Luncheon—Ballroom—1:00 P.M.

Virginia Obstetrical & Gynecological Society
Luncheon—Colonial Room—1:00 P.M.

Virginia Orthopedic Society
Luncheon—Exhibit Hall—12:30 P.M.

Virginia Pediatric Society
Luncheon—Parlor E—1:00 P.M.

Virginia Society of Plastic & Reconstructive Surgery
Luncheon—Parlor L—1:00 P.M.

Virginia Surgical Society
Luncheon—Parlor D—1:00 P.M.

Virginia Urological Society
Luncheon—Parlor F—1:00 P.M.

Reference Committees, The Medical Society of Va.
Reference Committee #1—Pine Room—3:00 P.M.
Reference Committee #2—Parlor D—3:00 P.M.

University of Virginia Alumni Association
Cocktail party—Ballroom—6:30 P.M.
Banquet—Ballroom

Medical College of Virginia Alumni Association
Cocktail party—Colonial Room—6:00 P.M.
Banquet—Colonial Room—7:00 P.M.

Tuesday, October 8

Virginia Industrial Medical Association
Breakfast—Parlor F—7:30 A.M.

Virginia Chapter, American College of Chest Physicians
Luncheon—Virginia Room—1:00 P.M.

House of Delegates, The Medical Society of Virginia
Second session—Colonial Room—3:30 P.M.

The Medical Society of Virginia
Cocktail party—Pine & Writing Rooms—6:30 P.M.

*Banquet—Ballroom—7:30 P.M.

Dancing—Ballroom—following conclusion of banquet

*Dr. Edward R. Annis, President, American Medical Association, will be our distinguished banquet speaker. Dr. Annis is widely acclaimed as medicine's best known and most effective spokesman.

SCIENTIFIC EXHIBITS

Salvage of Extremities by Vein Grafts—John A. Mannick, M.D. and David M. Hume, M.D., Richmond.

Presentation of operative technique, criteria of operability and clinical follow-up on 30 patients who underwent femoral-popliteal saphenous vein by-pass grafts to prevent amputation of extremities involved with far advanced peripheral vascular disease.

Demonstration Project in Phenylketonuria—Benedict Nagler, M.D., (Co-Sponsors: National Institute of Mental Health and Virginia Department of Mental Hygiene and Hospitals) Colony.

A five-year project in case finding, follow-up and control in phenylketonuria (PKU) to be demonstrated in cases identified through the screening of mentally retarded groups for PKU. Follow-up studies are designed to contribute to State-wide effort in the prevention and treatment of mental retardation due to PKU.

Tuberculosis—Virginia State Department of Health, Richmond.

An educational exhibit depicting the story of TB in slides (cartoon form). Takes TB from earliest days of primitive man and brings the story up to date with the inclusion of information correcting many presently held misconceptions about TB. Gives current problem in Virginia and what can be done about it. Exhibit uses the theme that "Like an iceberg, many TB cases are hidden under superstitions and misconceptions." Uses Christmas Seal, the official "figure" of the NTA as one of the focal points.

Virginia Association of Medical Assistants—

Posters giving the number of states organized, number of state members, numbers of chapters in Virginia, numbers of local members and year organized. History and education.

Radioisotopes in Cerebral Scanning—William P. Tice, M.D., John D. Varner, M.D., Edgar N. Weaver, M.D., and Charles D. Smith, M.D.

Radioisotopes offer an atraumatic method of diagnosis in patients suspected of having an intracranial mass lesion. It should not replace arteriography or cerebral air studies, but as an adjunct to these should provide a greater degree of accuracy in diagnosis. The method also provides valuable information about the size and shape of intracranial lesions.

Pulmonary Function in Electric-Arc Welders Compared with Non-Welders—Thomas N. Hunnicutt, Jr., M.D., David J. Cracovaner, M.D., John T. Myles, M.D., Newport News.

Pulmonary function in 100 welders has been compared with 100 controls; also the effect of cigarette smoking (in the two groups) on pulmonary function, with representative x-rays demonstrating Siderosis.

Steroid Cataracts (PSC) in Rheumatoid Arthritis—Robert Irby, M.D., Bernard Wittkamp, M.D., Elam C.

Toone, M.D., and Herbert Wiesinger, M.D., Richmond.

The exhibit will contain a schematic representation of a longitudinal section of the eye to demonstrate the nature of posterior subcapsular cataract of the eye. These will be fundus-camera photographs of PSC along with case histories of steroid treated rheumatoid arthritis patients. Included will be other observers incidence of this lesion and two charts containing data on the fifteen patients reported in our series.

Population and Preventive Medicine—Virginia League for Planned Parenthood, Richmond.

The physician's role as a leader in Family Life education.

Proctosigmoidoscopy for Asymptomatic Cancer—American Cancer Society, Richmond.

A chart emphasizes the number one position of rectal and colon cancer in incidence and mortality in this country. The center panel illustrates the relatively low percentage of cancers detectable by digital and x-ray examinations, and the high percentage (70%) within reach of proctosigmoidoscopy is illustrated. The proctosigmoidoscopic examination is a simple procedure, which is easily learned, easily done or, if preferred, easily referred to another physician.

Radioisotope Scanning—William F. Weller, M.D., Reuben D. Knopf, M.D., and John K. Cobb, M.D., Roanoke.

The exhibit will demonstrate the use of radioisotope scanning and radioactive isotopes in the diagnosis of various conditions involving kidneys, thyroid, liver, spleen and blood pools.

Esophageal Hiatal Hernia Repair—Marcellus A. Johnson, III, M.D., Roanoke.

Radiologic and clinical follow-ups, averaging three years, of 178 patients with sliding esophageal hiatal hernias repaired transthoracically. X-rays, charts, and graphs will depict.

Reconstructive Facial Surgery—John B. Gorman, M.D., Lynchburg.

Visual demonstration of diagnoses and therapy in deformities of the face, particularly the nose and jaws. Total of 10 cases will be presented.

Secretory Otitis Media—John B. Gorman, M.D. and James R. Gorman, M.D., Lynchburg.

Secretory otitis media is commonly overlooked as the cause of loss of hearing, particularly in children. The exhibit will consist of ten moulage ears. The viewer looks through each ear viewing a lighted photo of various cases of secretory otitis media. The management is demonstrated in the same way.

Retinal Burns—Walter J. Geeraets, M.D., William T. Ham, Jr., Ph.D., and DuPont Guerry, III, M.D., Richmond.

This exhibit presents a history of chorioretinal burns, basic physical principles concerned with production of retinal burns, results of laboratory experimentation of thermal injury and results of retinal thermal injury.

Day Care Treatment of the Emotionally Disturbed Child and Adolescent—William M. Lordi, M.D., Richmond.

This exhibit has pictures and brochures on a Day Care Program for psychotic and pre-psychotic children and adolescents. In the Day Care Program, there is remedial education, psychotherapy, arts and crafts activities and special therapy such as speech. The Day Care Program provides an opportunity at less expense than hospitalization and yet, at the same time, provides services on an intensive basis for the child and his family on a community based level.

Seaboard Medical Association of Virginia and North Carolina

This exhibit will consist of a series of illustrated posters encouraging members of The Medical Society of Virginia to join the Seaboard Association.

Treatment of Tendon Injuries to the Hand—John W. Devine, Sr., M.D., and John W. Devine, Jr., M.D., Lynchburg.

Various flexor tendon injuries to the hand will be

demonstrated by moulage models and the type of treatment for them will be shown. Emphasis will be placed on those requiring immediate repair and those where delayed repair is advised.

Quality Control in the Clinical Laboratory—Virginia Society for Pathology.

Importance and features of quality control program in the clinical laboratory.

Laboratory Medicine—Virginia Society for Pathology.

Description and interpretation of laboratory procedures of general interest.

Surgical Management of Extensive Carcinomas of the Mouth and Pharynx—Claude C. Coleman, Jr., M.D., and John E. Hoopes, Charlottesville.

This exhibit will demonstrate that adequate, well planned resections are the rational therapy in the treatment of almost all cancers arising in these areas. It will also demonstrate that such resections must be planned from a preoperative blueprint of the projected reconstruction. By such an approach, local flaps designed for future reconstruction afford generous exposure for the most extensive cancer resections. Most of the cases presented describe the treatment of recurrent cancers of the tongue, floor of mouth and laryngo-pharynx.

TECHNICAL EXHIBITS

Technical Exhibits will be located in the Shenandoah Room. The following companies have reserved space:

ABBOTT LABORATORIES, North Chicago, Illinois
AMERICAN CASUALTY COMPANY, Roanoke
BURROUGHS WELLCOME & COMPANY, INC., Tuckahoe, New York

CIBA PHARMACEUTICAL PRODUCTS, Summit, New Jersey

THE COCA COLA COMPANY, Roanoke and Atlanta, Georgia

DAVIES, ROSE & COMPANY, LTD., Boston, Massachusetts

GEIGY PHARMACEUTICALS, Yonkers, New York
CHAS. C. HASKELL & COMPANY, INC., Richmond
LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, Pearl River, New York
ELI LILLY AND COMPANY, Indianapolis, Indiana
THE S. E. MASSENGILL COMPANY, Bristol, Tenn.
MEAD JOHNSON & COMPANY, Evansville, Indiana
THE NATIONAL DRUG COMPANY, Philadelphia, Pennsylvania.

ORTHO PHARMACEUTICAL CORPORATION, Raritan, New Jersey

PEOPLES DRUG STORES, Washington, D. C.
PFIZER LABORATORIES, New York, New York
PHYSICIANS PRODUCTS COMPANY, INC., Petersburg

WM. P. POYTHRESS & COMPANY, INC., Richmond
R. J. REYNOLDS TOBACCO COMPANY, Winston-Salem, North Carolina

RICHMOND SURGICAL SUPPLY COMPANY, Richmond

A. H. ROBINS COMPANY, INC., Richmond
ROCHE LABORATORIES, Nutley, New Jersey
ST. PAUL FIRE & MARINE INSURANCE COMPANY, Richmond

SANBORN COMPANY, Waltham, Massachusetts
SANDOZ PHARMACEUTICALS, Hanover, N. J.
W. B. SAUNDERS COMPANY, Philadelphia, Pa.
JULIUS SCHMID, New York, New York
G. D. SEARLE & COMPANY, Chicago, Illinois
SMITH, KLINE & FRENCH LABORATORIES, Philadelphia, Pennsylvania

THE STUART COMPANY, Pasadena, California
E. R. SQUIBB & SONS, New York, New York
SYNTEX LABORATORIES, INC., Palo Alto, Calif.
U. S. VITAMIN & PHARMACEUTICAL CORPORATION, New York, New York

VAN PELT & BROWN, INC., Richmond
WALLACE LABORATORIES, Cranbury, New Jersey
WARNER-CHILCOTT LABORATORIES, Morris Plains, New Jersey

WESTWOOD PHARMACEUTICALS, Buffalo, New York

WINTHROP LABORATORIES, New York, New York

REPORTS FOR 1963 ANNUAL MEETING

Executive Secretary-Treasurer

The story of The Medical Society of Virginia continues to be one of growth, progress and service. Because of the changing times in which we live, it is also a story of adjustment. The political climate is now such that it is virtually impossible for a state medical society to proceed, with steady and unchanging gait, down the road it has traveled so deliberately over the years. Such a society must of necessity be flexible and possess the ability to react swiftly when conditions so dictate.

This, of course, is the position in which The Medical Society of Virginia, along with all other state medical societies, has found itself the past few years. Unforeseen demands, stemming from efforts to bring medicine under further government control, caused your House of Delegates to authorize a dues increase effective last January. Although such increases are always painful, it is good to report that the membership accepted the House decision as being quite justified, and, in effect, committed itself to the all-out struggle to preserve our traditional free practice of medicine. The result is that we have now a profession more united than at any time in its history.

The past twelve months have been busy ones, featured by numerous small scale skirmishes which always precede the main battle. Proponents of King-Anderson have, we must admit, done a good job of sowing doubt and some confusion in the minds of the nation's physicians, but now that their strategy has been revealed, it becomes quite clear that another major assault upon the Ways and Means Committee of the House of Representatives will be launched at any time the Administration believes it has the votes to report the bill.

We cannot help but mention at this point that all efforts to foist socialized medicine upon the American people have failed since they first became positively identified in the 1940's. The contribution of state medical societies to this cause has been considerable. Little wonder then that the "national guard" of medicine is both despised and feared by those who espouse the philosophy of the welfare state.

While the King-Anderson battle continues unabated, the other work of The Medical Society of Virginia must go on. The remainder of this report will be devoted to a quick glance at some of the things which are of concern and importance to your State Office staff.

Administration: It is not the function of your staff to determine policy, but rather to implement and carry out policy decisions of officers, Council and House of Delegates. This carries with it the responsibility of seeing to it that Society affairs are transacted with a minimum of expense, while at the same time obtaining the maximum in results. Your staff has done its best to fulfill that responsibility. You must be the judge as to how well it has succeeded. Careful study of the Auditor's report, which will be published in the December issue of the Virginia Medical Monthly, will help you reach a decision.

It is entirely possible that some might wonder what the regular, year in-year out duties of the State Office staff really are. Among other things, they include handling of

all official correspondence, preparation of minutes, meeting notices, dissemination of information, membership records (AMA and State), bookkeeping, arrangements for Annual Meetings and sessions of Council and House of Delegates, publication of Virginia Medical Monthly, maintenance and operation of Headquarters Building, committee assistance, addressograph services, information service for industry and allied organizations, publication of "News and Views", etc.

Membership: For the first time in recent years, the growth in membership has slowed perceptibly. Just why this should be is difficult to answer at this time. Perhaps the number of physicians coming into the State has decreased — we are not sure. Even so, another new high is reported and we are well on our way to the 3,200 level. The complete membership story follows:

Members reported		
July 31, 1962		3,091
New members	148	
Reinstated	5	
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Gain		153
Deaths	55	
Resignations	33	
Dropped	20	
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Loss		108
Net increase		45
		<hr/>
Total Membership July 31, 1963		3,136

Legislation: Since the General Assembly enjoyed an off year (next session begins January, 1964), there was no legislative action at the State level. There were meetings, however, between the Liaison Committee to the State Department of Welfare and officials of that Department for the purpose of discussing full and effective implementation of Kerr-Mills on January 1. This means that the Society's number one legislative objective during the 1964 session of the General Assembly will be to make sure that sufficient funds are appropriated to insure the smooth and uninterrupted operation of Kerr-Mills in our State.

One of the highlights of the year, as far as The Medical Society of Virginia is concerned, was the mission to Washington carried out by members of the Committee on National Legislation. The Committee sponsored a luncheon at the Capitol for Virginia's Congressional delegation, and once again came home with the feeling that Virginians are extremely fortunate to be represented by such able and dedicated men.

Plans have been completed for the Society to join with the Virginia Council on Health and Medical Care and the Virginia Hospital Association to sponsor a State-wide conference on the State-Local Hospitalization Program on October 17 in Roanoke. It is hoped that by stressing the importance of this program in the battle to preserve the proper role of the State, the various localities will see to it that adequate funds are appropriated which, along with the State's matching funds, will guarantee hospital care for the medically indigent of all ages — not just those over sixty-five.

VaMPAC: Although the Virginia Medical Political Action Committee is an entirely separate and distinct organization, The Medical Society of Virginia urged its formation and is cooperating in every possible manner. All members of the Society received a special issue of "News and Views" announcing the birth of VaMPAC and explaining its purpose and objectives. While the response has been fair, it could be much better. This is the one sure way physicians and their friends can strike real blows for freedom.

Association of the Professions: The Society has been invited to join with other professional organizations in Virginia in organizing an "Association of the Professions". The purpose would be to make possible concerted action on all matters of mutual interest and concern. Representatives of The Medical Society of Virginia have met on two occasions with representatives of the other groups, and it is entirely possible that a recommendation of a positive nature will soon be forthcoming.

Headquarters Building: It is feared that the Virginia Hospital Association will soon outgrow its office on the second floor. Whether the House Committee can find some means to enlarge the present office space and thereby keep this strong ally with us is a matter yet to be considered.

The problem of the leaking roof, which has plagued the staff for so long, is apparently being solved through the process of elimination. Leaks continue to show up from time to time, but prompt action on such occasions is definitely paying off.

Virginia Medical Monthly: The "Monthly" continues to rank among the top ten state medical publications in the nation, and we have reason to believe that its actual overall publication cost is the lowest anywhere. Although available statistics show it second only to Texas in advertising volume, the Virginia Medical Monthly still feels the result of the trend toward reduced advertising begun two years ago by many pharmaceutical firms. The failure of a "comeback" in national advertising volume is depriving the Monthly, and the Society, of a sorely missed source of income.

We take this opportunity to call attention of the membership to the excellent work of our Managing Editor, Miss E. Spencer Watkins—perhaps the only one-woman editorial staff in the country!

National Meetings: Your Society was represented at both sessions of the American Medical Association, the AMA Institute, National Conference of Mental Health Committee Chairmen, Annual Meeting of Professional Convention Management Association, Post-Graduate Course sponsored by Medical Society Executives Association, Conference of State Journal Editors and Business Managers, National Legislative Conference, Regional Meeting of Medical Society Executives Association and National Conference of American Medical Political Action Committee.

During the AMA Annual Meeting in Atlantic City, The Medical Society of Virginia joined with its Southeastern neighbors in sponsoring a hospitality room in the headquarters hotel. This has proven to be a very inexpensive

way of repaying the hospitality shown us over the years by many of the larger state medical societies. The handling of all arrangements at Atlantic City was the responsibility of The Medical Societies of Virginia and Tennessee.

The Virginia Council on Health and Medical Care: Numerous requests for placement assistance continue to be received, and 55 were referred to the Council during the year.

The Society, principally through the work of Dr. Shelton Horsley, III, worked closer than ever with the Council's Health Careers Recruitment Program, and a more effective type of participation should be the result.

Personnel: The number of full-time staff employees remains at four. It has been necessary, however, to utilize part-time help on numerous occasions, and it is not unlikely that another full-time secretary will be employed in the not too distant future.

Your Executive Secretary continues to take pride in the work (both volume and quality) turned out by the smallest staff of any medical society in the nation having over 3,000 members. Miss Watkins, Mrs. Spring and Mr. Smith most certainly deserve not only the appreciation of the Executive Secretary, but the entire membership as well.

As we approach the end of another memorable and eventful year, we point with profound admiration and pride to a President who has guided the affairs of the Society in a firm and decisive manner, and to a Council which has accepted its responsibilities completely and without question.

ROBERT I. HOWARD
Executive Secretary-Treasurer

AMA Delegates

Although it is not possible to cover all of the matters considered by the AMA House of Delegates during its meeting at Atlantic City in June, your delegates would like to report some of the more interesting and important. All three of your delegates attended the meeting.

Board of Trustees: Amendments to the AMA Constitution and By-Laws, increasing the size of the Board from eleven to fifteen members, were adopted. The changes provide for the election of three additional trustees, and also include the immediate past-president for a one year term. It was the opinion of the House that enlargement of the Board "would improve communications between the Board and the Association" and that the proposed changes "would be consistent with the increase in membership of the Association and with the increase of the size of the House of Delegates."

Interns and Residents: Following a spirited floor battle, the House disapproved the report of the Council on Medical Service and the Council on Medical Education and Hospitals having to do with compensation of House officers. In taking such action, it adopted the following statement:

"We therefore recommend that in view of the overwhelming opposition to the basic proposal contained in

the report of the Council on Medical Service and the Council on Medical Education and Hospitals, the AMA record itself as opposed to any system or program by which any part of an intern's or resident's salary is paid out of fees collected by the attending physician or out of fees collected under any type of medical-surgical insurance coverage."

Another action, related to the controversial "25% rule", found the House approving a revision of the "Essentials of an Approved Internship", which deletes the requirement for any stated proportion of foreign medical graduates and graduates of American and Canadian medical schools as an essential feature of any internship program.

Research Institute: The House approved plans of the AMA Education and Research Foundation to establish and operate a new Institute for Biomedical Research. Reports indicate that the Institute will be concerned with an intensive and fundamental study of life processes particularly as related to intracellular mechanisms. The House was assured that the Institute would be dedicated to pure, basic non-disease oriented research, and will not render medical service to patients. Also, there will be no graduate training programs leading to a degree.

Pension Plan: Establishment of an AMA physicians' pension plan, under the Self-Employed Individuals' Retirement Act of 1962, was approved. The plan will be available to all AMA members and their employees, providing they can qualify under the Act, Public Law 87-792 (Keogh).

We take this opportunity to remind members of The Medical Society of Virginia that the Society has its own savings and retirement program designed to take advantage of Keogh provisions. The law permits a self-employed individual to set aside up to \$2,500, or 10% of his annual income, whichever is less, in a retirement fund. The first \$1,250 is deductible. The physician, however, must provide proportionate benefits for any employee who works for him more than 20 hours a week and more than five months each year.

Tobacco and Disease: It was the opinion of the House that AMA should defer any definitive statement regarding the relationship of tobacco and disease. A report by the Board of Trustees, with which the House concurred, pointed out that AMA is continuing its study of this important subject and is merely deferring any public pronouncement pending availability of more information. The House went on to say that extensive research is still needed to obtain answers on the cause and effect of many toxins—including tobacco.

It was pointed out, however, that AMA "has a duty to point out the effects on the young of the use of toxic materials, including tobacco, and these facts should be disseminated, particularly in our schools."

Miscellaneous Actions: Among other things, the House also:

1. Disapproved a Judicial Council report having to do with the dispensing of glasses by ophthalmologists and reaffirmed that "Drugs, remedies or appliances may be dispensed or supplied provided it is in the best interest of the patient."

2. Approved a Judicial Council opinion on physician ownership of drug stores, drug repackaging houses and pharmaceutical companies. Thus, it is still ethical for a physician to own a drug store "provided there is no exploitation of the patient." However, it is unethical for a physician to have a financial interest in a drug repackaging company or to own stock in a pharmaceutical firm "which he can control while actively engaging in practice."

3. Agreed with the Council on Legislative Activities that the House should take no official position on the "Liberty Amendment", but should call it to the attention of individual physician citizens.

4. Disapproved of federal funds for staffing new community mental health centers.

5. Took a position opposing the student loan provisions of the Health Professions Educational Assistance Act of 1963.

6. Urged all state and county medical societies to adopt and activate all phases of "Operation Home-town".

7. Recommended that local medical societies in the vicinity of medical schools assume the responsibility of establishing and maintaining clear lines of communication with medical students.

8. Approved the organization of the new National Council for the Accreditation of Nursing Homes, jointly sponsored by the AMA and the American Nursing Home Association.

9. Commended the American Farm Bureau for its vigorous leadership in opposing unwarranted government interference and regulation.

VINCENT W. ARCHER, M.D.

W. LINWOOD BALL, M.D.

ALLEN BARKER, M.D.

Principles and Policies

Although there have been no formal meetings during the past year, the committee recommends that The Medical Society of Virginia reaffirm the principles and policies adopted by the House of Delegates in 1958.

BENJAMIN W. RAWLES, JR., M.D., *Chairman*

Medical Service

The House of Delegates referred to this Committee only one item for consideration and we have received no other request for assistance during the year insofar as the Committee as a whole is concerned. The particular item referred by the House of Delegates concerned a request of Southwestern Virginia Medical Society, requesting that The Medical Society of Virginia attempt to secure a change in legislation which would enable the patients to select qualified physicians of their choice in all compensation cases.

This matter was referred to the Sub-Committee on Industrial Health for consideration and a report. This Committee recommended unanimously that there be no change in the present compensation law with reference to choice of physician for medical care in compensation cases. The Medical Service Committee has been circularized regarding the Sub-Committee's report and the

Committee endorses the report of the Sub-Committee on Industrial Health. It is noteworthy that this matter has received attention on many occasions in the past. It is the feeling of the Committee that there are adequate channels for relief in the event of injustice and that the present plan has proved satisfactory to most individuals concerned.

The Committee on pre-paid medical insurance chairmanned by Dr. William A. Johns has had a very active year. They have received a number of requests for recommendations regarding possible disparity of fees or overcharging. The chairman notes that there is an increasing demand for their services, particularly since catastrophic or major-medical type of insurance coverage is becoming more popular.

The Committee wishes to recommend that we continue the appropriation to the 4-H Club program. This amounts to \$500.00 which is divided into several awards and definitely ties in medical matters with the 4-H program. It is considered a very worthwhile program by all of those who have participated.

The chairman wishes to thank all members of the Committee for their assistance although it has not been necessary to have a formal meeting during the year.

CHARLES L. SAVAGE, M.D., *Chairman*
WALTER P. ADAMS, M.D.
RICHARD E. PALMER, M.D.
SNOWDEN C. HALL, JR., M.D.
RAY A. MOORE, JR., M.D.
JAMES M. PEERY, M.D.
C. V. CIMMINO, M.D.
W. C. STONE, M.D.
BARNES GILLESPIE, M.D.
WILLIAM A. JOHNS, M.D.

Public Relations

The word is getting around that the "image" of the American physician is not good—that the public is finding more and more fault with the doctor of today and the way he practices. Although many thousands of words have been written on the subject, we have good reason to believe that the picture is not as bad as it has been painted. Actually, the "physician image" is bad because some individuals in Washington say it is bad. If it really is poor, it is because the professional politicians of the New Frontier have made it so—with propaganda barbs, untruths, insinuations and rumor dropping. Your committee firmly believes that the so-called "physician image" can change as quickly as the political climate in Washington can be moderated.

This is not to say that we absolve the physician of all blame for the state of affairs in which we find ourselves. As a matter of fact, physicians are still inclined to take the line of least resistance and say "Let someone else do it." The truth is, and has always been, that no one else can do it—each physician must do it for himself. He must practice good PR day in and day out—every week of every month of every year. We say again that good PR begins, or ends, in the physician's office. And if good PR is practiced in the physician's office, then all the propaganda arrows that Washington is capable of unleashing cannot bring the profession to its knees.

Your Public Relations Committee has done its best during the year to enhance the prestige of the physician over the State. We believe you will be interested to learn about those projects of which we are the proudest.

Special Senior Day Programs were once again presented for senior medical students of our two medical schools. Each program—one in Richmond and the other in Charlottesville—featured an excellent dinner and splendid talk by Congressman John O. Marsh, Jr., (D., Va.). Congressman Marsh spoke about the years of decision and responsibility which await young physicians and impressed upon them the fact that they, perhaps more than any other group, have an excellent opportunity to shape and guide the future course of this nation. One point that Congressman Marsh stressed was urging our medical schools to produce a larger graduating class, at the same time maintaining the high quality of their present class, and attempt to have a higher percentage of each graduating class go into general practice.

Your committee continued to work closely with the Virginia Association of Medical Assistants. We have no doubt but that the medical assistant is, next to the physician himself, the most powerful single force for good public relations. In addition to working with the various local chapters, your Chairman attended the annual meeting of the State Association and the committee made available the hospitality room during a State sponsored seminar in Lynchburg.

For the sixth consecutive year special awards were presented by the Committee on Rural Health to those boys and girls in the 4-H Club who completed outstanding health projects. This is undoubtedly one of the finest PR projects sponsored by the Society, and we hope that it can be continued indefinitely.

Acting at the request of the State Chamber of Commerce, the Society was successful in obtaining Dr. Edward R. Annis as a featured speaker during the Chamber's annual meeting in Alexandria. Dr. Annis addressed 400 of Virginia's most distinguished lay and professional leaders, and his inspiring address did much for Virginia medicine. Your committee would like to call attention to the cocktail party sponsored during the Chamber meeting by the Arlington, Alexandria and Fairfax Medical Societies in honor of Dr. Annis. The Chamber was very appreciative of this fine gesture.

The relation between religion and medicine is very much in the news these days, and the American Medical Association has seen fit to establish a special committee to work in this field. The committee's secretary, Rev. Paul B. McCleave, Chicago, was invited by your Chairman to participate in a special pilot meeting on medicine and religion in Lynchburg. It is good to report that the meeting was a big success, and it is hoped that similar programs will be sponsored over the State during the coming year.

Once again your Chairman attended the annual AMA Institute in Chicago. This is undoubtedly the one meeting which local PR chairmen and other officers, such as State President, President-Elect, Vice-President, other members of the PR Committee, and Councilors, should make every effort to attend. However, despite our urging each year, Virginia continues to be plagued by very poor attendance.

The Virginia Chapter, Public Relations Association of America, invited your Chairman and Executive Secretary to discuss medical public relations during their 1962 fall meeting. The meeting was held at Richmond's Executive Motor Hotel and we made good use of the opportunity to acquaint some of Virginia's leading PR executives with medicine's position on King-Anderson and similar legislation.

The committee is pleased to report that its Chairman again served as a member of the Special Advisory Committee to the National Junior Chamber of Commerce. As a result of this affiliation, young physicians are being encouraged to participate in Junior Chamber activities. Senior medical students received special information on the Chamber during the year.

Attention of the membership is called to "Operation Hometown"—a detailed program utilizing the joint efforts of AMA, The Medical Society of Virginia and component medical societies to defeat King-Anderson legislation. "Operation Hometown" is a highly developed public relations program in itself, and all local societies are urged to cooperate and insure its success. Many component societies have already been contacted by the State Office concerning this program, and the remainder will undoubtedly be approached within the next few weeks.

The committee takes this opportunity to express its appreciation to the radio and television stations of Virginia which have cooperated so well in presenting many public service health messages and spot announcements during the year. They have been most helpful.

These are crucial times in which we live, and medicine is definitely on the spot. Physicians have no excuse for saying they have no time to engage in public relations activities. The truth of the matter is that they practice public relations every minute they practice medicine. Whether that public relations is good or bad is up to them individually.

JOHN WYATT DAVIS, JR., M.D., *Chairman*
THOMAS W. MURRELL, JR., M.D.
MASON C. ANDREWS, M.D.
MARCELLUS JOHNSON, III, M.D.
HAROLD W. FELTON, M.D.
ROBERT L. CASSIDY, M.D.

Membership

No problems were referred to your committee during the past year, and, consequently, no meetings of the committee were held.

As in past years, the names of new members have been published in the Virginia Medical Monthly, and the committee will forego listing them for a second time. We take this opportunity, however, to extend all of them a most cordial welcome.

Your committee considers it a very real privilege to nominate Dr. Fletcher J. Wright, Jr., for Honorary Active Membership in The Medical Society of Virginia. As President, Dr. Wright has led the Society through another crucial year and has earned the sincere appreciation of all Virginia physicians.

MARION W. FISHER, M.D., *Chairman*
A. A. CREECY, M.D.
DONALD H. MCNEILL, M.D.

Judicial

After the last meeting of the House of Delegates, the Judicial Committee was asked for a ruling as to the eligibility of the member elected to Council from the Ninth District. This question had arisen also at the previous meeting. The committee's decision was that the present intent of the By-Laws is that a member must be actually a resident and practicing in the district to be eligible.

CONSTITUTION

The following amendment to the Constitution is proposed.

Article V—Officers

Amend the first paragraph to read as follows:

"The officers of the Society shall be a President, a President-Elect who shall succeed to the Presidency the following year, three Vice-Presidents, a Speaker and a Vice-Speaker of the House of Delegates, and an Executive Secretary-Treasurer. The office of the Executive Secretary-Treasurer may be held by a non-member."

(The purpose of the proposed amendment is to make it clear that the Speaker and Vice-Speaker are officers of the Society and that the ticket prepared by the Committee on Nominations in accordance with Article VI of the By-Laws shall contain nominations for these positions.)

BY-LAWS

The following amendments to the By-Laws are proposed:

Article I—House of Delegates

Amend the second sentence of Section 7 to read as follows:

"Except where the number of nominees does not exceed the number of delegates to be elected, such delegates shall be elected by ballot, and each member shall be allowed to vote for as many of the nominees as there are delegates to be elected."

Amend the fourth sentence of Section 7 to read as follows:

"Following the election of delegates, alternates shall be elected, and except where the number of nominees does not exceed the number of alternates to be elected, such alternates shall be elected by ballot, and each member shall be allowed to vote for as many of the nominees as there are alternates to be elected."

(The purpose of the proposed amendments is to avoid the necessity of a vote by ballot where there is no contest.)

Article VI—Election of Officers

Amend the fourth sentence of Section 1 to read as follows:

"Except where there is only one nominee for an office, the election of officers shall be by ballot, and a majority vote shall be necessary for election."

(The purpose of the proposed amendment is to avoid the necessity of a vote by ballot where there is no contest.)

Amend the first sentence of Section 4 to read as follows:

"The House of Delegates shall at each annual session elect a First Vice-President, a Second Vice-President,

and a Third Vice-President, to rank accordingly, these as far as possible to represent the various sections of the state."

(The purpose of this amendment is to make this By-Law conform to present practice and to Article VI and Article VII of the Constitution, and Article VII, Section 8, and Article VIII, Section 3, of the By-Laws.)

Amend the second and last sentence of Section 6 by changing the word "President" to "Speaker".

(The purpose of this amendment is to make the By-Laws conform to present practice and to the apparent intention of Article VII of the Constitution.)

Your committee recognizes the fact that many members of the Society feel that eligibility for membership in a particular component society, for membership on the Council, and for representation in the House of Delegates should be determined by the place where the member carries on the principal part of his practice rather than the place where he has his home or place of residence; further that if such a plan is adopted an exception would have to be made in cases where a member resides in the State and carries on the principal part of his practice in an adjoining state. Under the present By-Laws these matters are determined by residence rather than by place of practice.

In order that the House of Delegates may be given a choice between the two tests of eligibility, your committee has prepared two sets of amendments. The first amendments are designed to change the tests of eligibility from residence to place of practice, while the second are designed to retain the residence test and to rewrite only those sections of the By-Laws which seem to need clarification.

The first set of amendments is as follows:

BY-LAWS

Article III—Component Societies

Amend the third and fourth sentences of Section 2 to read as follows:

"Should it seem desirable that a component society in one or more political subdivisions in a Congressional District unite with a component society in one or more political subdivisions in an adjoining Congressional District as a single component society, or should it seem desirable that physicians having the major portion of their practice in one or more political subdivisions in a Congressional District, in which political subdivision there is no component society, and physicians having the major portion of their practice in one or more political subdivisions in an adjoining Congressional District, in which political subdivision there is no component society, unite to form a single component society, such action may be taken, provided it be sanctioned by the Councilor from each of such Districts. Such component society shall be deemed to be in the jurisdiction of the Councilor or the Congressional District in which the majority of its membership have the major portion of their practice."

(The purpose of the proposed amendment is to provide that groups of physicians in political subdivisions in which there are no component societies, which political subdivisions are in adjoining Congressional Districts, may unite

to form a single component society, also to make the test of eligibility for membership in such society the place of practice rather than place of residence.)

Amend Section 4 to read as follows:

"A physician shall not be eligible to join a component society other than a component society which is in the political subdivision in which he carries on the major portion of his practice, except that if a physician practices both in Virginia and in an adjoining state or the District of Columbia, he may join a component society in the political subdivision in which he resides. In all other respects each component society shall judge the qualifications of its members. This section is subject to the provisions of Section 7 of this article."

(The purpose of the proposed amendment is to make place of practice rather than place of residence the test of eligibility for membership in a component society, with the exception stated.)

Amend Section 7 to read as follows:

"A member may join a more convenient component society in the same or an adjoining political subdivision if the component society, or societies, having jurisdiction in the county or city in which he carries on the major portion of his practice gives consent, or may join a component society in an adjoining political subdivision if there be no component society in the political subdivision in which he carries on the major portion of his practice."

(The purpose of the proposed amendment is to make place of practice rather than place of residence the test in determining the society which may give consent, also to take care of a situation in which there is no component society in the political subdivision in which the physician practices.)

Article V—House of Delegates

Amend the second paragraph of Section 2 to read as follows:

"In the event a member of a component society, authorized to vote therein, is also a member of another component society in which he is authorized to vote, he may vote for members of the House of Delegates and be a candidate for election to the House of Delegates only in the Society established in the territorial area in which he carries on the major portion of his practice, and in the numerical apportionment of membership in the House of Delegates, he shall not be counted as a member of any component society except the one established in the territorial area in which he carries on the major portion of his practice, except that, if he practices both in Virginia and in an adjoining state or the District of Columbia, he may vote for members of the House of Delegates and be a candidate for election to the House of Delegates in, and he counted as a member of, the society established in the territorial area in which he resides."

(The purpose of the proposed amendment is to make place of practice rather than place of residence the test of eligibility for voting for candidates and being a candidate for membership in the House of Delegates and for apportionment of membership, with the exception stated.)

Article VIII—Council

Amend Section 1 by inserting after the first sentence the following sentence:

"To be eligible to serve as a representative from a Congressional District a member must carry on the major portion of his practice within the boundaries of the district to be represented, except that if he practices both in Virginia and in an adjoining state or the District of Columbia, he shall be eligible to serve as such representative if he resides within the Congressional District to be represented."

(The purpose of the proposed amendment is to make place of practice rather than place of residence the test of eligibility for membership on the Council, with the exception stated.)

In the event the House of Delegates desires to retain residence as the test of eligibility for membership in a component society, or for representation in the House, or on the Council, your committee proposes the following amendments for purpose of clarification.

BY-LAWS

Article III—Component Societies

Amend the third sentence of Section 2 to read as follows:

"Should it seem desirable that a component society in one or more political subdivisions in a Congressional District unite with a component society in one or more political subdivisions in an adjoining Congressional District as a single component society, or should it seem desirable that physicians residing in one or more political subdivisions a Congressional District, in which political subdivision there is no component society, and physicians residing in one or more political subdivisions in an adjoining Congressional District, in which political subdivision there is no component society, unite to form a single component society, such action may be taken provided it be sanctioned by the Councilor from each of such Districts."

(The purpose of the proposed amendment is to take care of a situation in which there are no component societies in the political subdivisions in which the physicians reside.)

Amend Section 7 to read as follows:

"A physician may join a more convenient component society in the same or an adjoining political subdivision if the component society, or societies, having jurisdiction in the county or city in which the physician resides gives consent, or may join a component society in an adjoining political subdivision if there is no component society in the political subdivision in which he resides."

(The purpose of the proposed amendment is to take care of a situation in which there is no component society in the political subdivision in which the physician resides. The word "physician" seems more appropriate than "member" in this section.)

Article VIII—Council

Amend Section 1 by adding the following after the first sentence:

"Any member of a component society in the jurisdiction of the Councilor of a Congressional District is eligible for election to represent that District."

(The purpose of the proposed amendment is to clarify completely the question of eligibility for election to Council.)

W. CALLIER SALLEY, M.D., *Chairman*
JOHN R. SAUNDERS, M.D.
GUY W. HORSLEY, M.D.

Mediation

Your committee again enjoyed a very quiet year. As a matter of fact, only two matters were brought to the attention of your Chairman, and only one required a formal meeting. Fortunately, the committee was able to meet during the Annual Meeting in Washington.

We understand, however, that a good many grievances are still received by local committees each year. The fact that so few are appealed to your State Committee means that the component societies are doing an effective job. Judging from reports received from other states, Virginia is most fortunate in this regard.

HARRY C. BATES, M.D., *Chairman*

Ethics

No serious problems were reported to your committee during the past year, and no formal meetings were held.

A number of inquiries have been received, however, with reference to whether physicians can ethically own drug stores. A report last November by the AMA Judicial Council, recommending that physician owned drug stores be declared unethical, had been rejected by the AMA House of Delegates and sent back for further study. During the annual meeting of AMA at Atlantic City, the House accepted a Council report which says in effect that it is still proper for a physician to own a drug store "provided there is no exploitation of the patient."

RUSSELL G. McALLISTER, M.D., *Chairman*
ROBERT P. PRICE, M.D.
JOHN SMOOT, M.D.

Publication

For several years the Virginia Medical Monthly had an abundance of advertising matter and a limited number of scientific articles to choose from. The sharp reduction in drug advertising following the recent Kefauver inquisition of the pharmaceutical companies has sharply reversed the ratio of advertising and professional material. We now have a number of excellent articles to draw from and a limited budget with which to publish them.

Even so we are more fortunate than most. The June, 1963, issue of the *Texas State Journal of Medicine* included the following item:

"A recent survey by the State Medical Journal Advertising Bureau, Inc., shows that Texas is the leader among 36 state journals for number of advertising pages for the five-month period January-May 1962.

The *Texas State Journal of Medicine* carried an average of 82.7 advertising pages per issue during those five months. This is 25 pages greater than the average of 57 pages for the 36 journals. Virginia ranked second with an average of 72.3 pages. At the bottom was Delaware with 46.3 pages."

Incidentally the cost of publishing The Texas Journal during 1962 was \$117,583 or \$2,500 less than the entire Medical Society of Virginia budget during the past year. Truly our Texas friends operate on the grand scale.

It is impossible to give accurate figures regarding the cost of publishing the Virginia Medical Monthly until after this issue goes to press but it is anticipated that our expenses this year will fall within our budget, just as they did last year, when \$38,000 was allocated and \$34,489 was spent.

We wish to thank those who forwarded the excellent material received by the journal during the past year and trust the members of The Medical Society of Virginia will continue to favor us with their writings.

HARRY J. WARTHEN, M.D., *Chairman*

House

Barring unforeseen expenses during the last six weeks of the current fiscal year, the expenses incident to operating The Medical Society of Virginia Headquarter's Building should fall well within this year's budget.

Expenses (September 1, 1962-July 22, 1963 were as follows):

Janitor (12 months)-----	\$1,183.00
Cleaning and supplies, etc.-----	211.02
Heating & Air Conditioning	
Service & Repairs-----	208.61
Yard Maintenance	
(\$40.00 for new bush)-----	547.26
Utilities-----	854.06
Taxes-----	1,671.88
Roof & other repair-----	89.50
Outside paint-----	238.00
Fuel oil (4582.2 gal.)-----	665.09
	<hr/>
	\$5,668.42

The above costs are more than covered by the \$6,000 for Building Maintenance and Repairs. A further cushion against major unanticipated expenses is provided by contributions toward Building Maintenance by the Virginia Academy of General Practice and the Virginia Hospital Association to the extent of \$2100 annually. These two fine organizations occupy the second floor of the Society's building.

Your committee is pleased to report that for the second consecutive year a leaking roof has not been a major problem and cautious optimism is expressed by our office staff that, at long last, this vexing problem finally has been overcome.

HARRY J. WARTHEN, M.D., *Chairman*
EDITH I. MILLER, M.D.
ROBERT V. TERRELL, M.D.

Mental Health

The Mental Health Committee met on January 9th, April 25th, and July 2nd.

During the first meeting, it was learned with regret of the resignation from the committee by Dr. Addison Duval, who was moving to Atlanta, Georgia, to become Director of the Division of Mental Health, Department of Public Health. The vacancy caused by his resignation was filled with the appointment of Dr. Robert Thrasher of Norfolk, by the president of The Medical Society of Virginia.

After many months of careful planning by experts in the field of mental health, an event of first magnitude, the First Congress on Mental Illness and Health, was held in Chicago, October 4-6, 1962. It is the opinion of many that the American Medical Association in sponsoring and convening this First Congress on Mental Illness and Health, gave recognition that it now considers mental illness to be the number one health problem in this country. The chairman and three others from this committee joined twelve others from Virginia to make a delegation of sixteen who attended this First Congress on Mental Illness and Health. During this meeting, a steering committee, composed of all present from the State of Virginia, was formed. The purpose and function of the steering committee is to implement the aims and proposals for a mental health program in Virginia such as was outlined at this First National Congress on Mental Illness and Health. It is the desire of the Mental Health Committee to work closely with this steering committee for the purpose of unifying our efforts in promoting a sound and vigorous mental health program in the State of Virginia.

As a start in this direction, we thoroughly endorse the communication of mental health knowledge by providing opportunities for physicians in general practice, and certain lay groups and organizations, to increase their knowledge of mental illness; providing improved services for hospitalized patients through legislative activity, enlistment of manpower, increased financial support and volunteer assistance; encouraging the development of a coordinated statewide program of aftercare and rehabilitation; seeking adequate statewide insurance coverage of mental illness; working for improved services for children, both emotionally disturbed and mentally retarded; exploring the possibility of developing nursing homes for the care of the mentally ill; and developing a speakers bureau of adequately prepared persons and providing for its effective use.

On April 6th, a symposium entitled Psychiatry for the General Practitioner, sponsored jointly by the Virginia Academy of General Practice, the Mental Health Committee of The Medical Society of Virginia, and the Neuropsychiatric Society of Virginia, was held at Westbrook Psychiatric Hospital, Richmond. The moderator was William Sheely, M.D., Chief, American Psychiatric Association General Practitioner Education Project, Washington, D. C. T. George Bidder, Associate Professor of Pharmacology, Western Reserve School of Medicine, spoke on Drugs and the Disturbed Patient. Zigmond M. Lehensohn, M.D., Clinical Professor of Psychiatry, Georgetown University, spoke on The Psychiatric Emergencies. Another symposium for the general prac-

titioners, sponsored by the Mental Health Committee, is planned for the fall of 1963.

Our committee was very gratified to learn from the chairman of the program committee for the annual meeting of The Medical Society of Virginia, that our request for a place on the program by a representative from the field of mental health had been approved. Our committee is happy to report that our speaker will be Dr. Jack Ewalt, President of the American Psychiatric Association, who will speak on Psychiatric Emergencies at 2:00 p.m. on October 8th.

Particular interest was expressed by the committee concerning the Governor's Commission currently studying statutes of Virginia relating to mental hygiene and hospitals, with especial reference to commitment laws and procedures. The work of the Commission was endorsed and we strongly urge that the Commission recommend a complete revision of that portion of the code pertaining to mental health.

The committee at its April meeting heard a request that it approve the budget to be submitted to the 1964 General Assembly by the Department of Mental Hygiene and Hospitals. A motion was then introduced which would have the committee endorse the proposed budget. The motion was seconded and adopted.

The committee learned with enthusiasm that the Commissioner of the Department of Mental Hygiene and Hospitals, who is the State mental health authority, upon the advice of the Governor of the Commonwealth of Virginia, will soon name a State Mental Health Study Commission to study a proposal for comprehensive mental health planning in Virginia, "The Commission to be composed of representatives of those agencies, organizations and interested groups whose concern in part or in whole, is the improvement of mental health services in the Commonwealth of Virginia."

It was learned that there will be regional conferences to investigate local community needs for the improvement of all aspects of mental health. It is gratifying to learn, too, that this is not just another survey but an entirely new program to allow the community to have a say as to their needs and as to how the program in their community is to be financed.

The Commissioner believes that this new program should not be imposed by the state or federal government on localities without first consulting citizens in these localities who will be called upon to finance such programs directly or indirectly. Therefore, the regional conferences will have a dual role: first, to determine community mental health needs; second, to hear proposals for financing the program.

The Mental Health Committee gives its endorsement to the above proposed plan and strongly recommends that The Medical Society of Virginia lend its support in every way possible.

At the first meeting of the committee it was brought to our attention the action that was taken by the Council of The Medical Society of Virginia at its annual meeting in Washington, D. C., October 14, 1962, relative to our proposal that clinical psychologists be placed under the supervision of the State Board of Medical Examiners by means of certification by them. We learned that Council adopted a motion requesting the Committee on

Mental Health to study the problem further, conferring with the Virginia Board of Medical Examiners, if necessary. The motion further requested the committee to report its findings and recommendations at a later meeting of Council. In an attempt to comply with the Council's instructions, our Committee has given further study to the request. We have been working with the Neuropsychiatric Society of Virginia, seeking to ascertain their views regarding this matter. We can now report that similar resolutions, one from the Neuropsychiatric Society of Virginia and the other from the Mental Health Committee of The Medical Society of Virginia, have been placed in the hands of the State Board of Medical Examiners. The following is the resolution sent to the State Board of Medical Examiners:

"Whereas the State Board of Medical Examiners has long established policies, procedures and apparatus for the evaluation and certification of the various professions dealing with the diagnosis and treatment of physical and mental illnesses and whereas the practice of clinical psychology pertains to diagnostic and therapeutic activities on individual patients.

Be it resolved That the State Code of Virginia, Chapter 6, Clinical Psychologists, Section 54-111, be amended to provide that the State Board of Medical Examiners of the State of Virginia issue the certificates for certification of clinical psychologists and to provide that provision be made for revocation of certificates and prohibition of the practice of medicine."

As this report goes to press, it is very gratifying to learn that there will be a meeting of a committee from the State Board of Medical Examiners jointly with representatives from the Neuropsychiatric Society of Virginia and the Mental Health Committee of The Medical Society of Virginia on August 26, to discuss the above resolution with hopes that proper legislation to implement the proposed change can be introduced in the next meeting of the Virginia General Assembly in 1964.

The Chairman wishes to express to the remainder of this committee and to Mr. Robert I. Howard, Executive Secretary, his appreciation for their cooperation and assistance in the formulation of this report.

JOHN R. SAUNDERS, M.D., *Chairman*
W. D. BUXTON, M.D.

ROBERT C. LONGAN, JR., M.D.
JOSEPH R. BLALOCK, M.D.
MILTON S. GOLDMAN, M.D.
SAMUEL S. MORRISON, M.D.
R. TERRELL WINGFIELD, M.D.
IRA L. HANCOCK, JR., M.D.
ROBERT B. NEU, M.D.
ROBERT H. THRASHER, M.D.

Traffic Safety

The current efforts of the Committee on Traffic Safety are directed toward the medical aspects of driving licensure. In cooperation with a committee from the Albemarle County Medical Society, under the chairmanship of Dr. Fletcher Woodward, and Dr. Mack I. Shanholtz, State Health Commissioner, and his associates, your committee is engaged in formulating recommendations to be presented to the Virginia Advisory Legislative Council

in preparation for the 1964 session of the General Assembly.

The question of periodic physical and mental examinations for all driving permit applicants has been raised by individuals and groups interested in traffic safety. After some study the committee felt that a program of routine physical examinations for the detection of the unsafe-driver is unsuitable for Virginia. A costly proposal of mass examination would impose a burden on the physician and would attract little interest in legislative councils.

An alternative plan is being considered. This plan is based on the fact that traffic safety is the number one public health problem, and can be handled in the same way as any communicable disease. It is proposed to make it mandatory for all physicians to report to the State Health Department every individual whose physical, mental or treatment condition is impaired to a degree incompatible with safe driving. If a physician should find in his patient, on routine examination, a defect which, in his opinion, constitutes a hazard to the safe operation of a motor vehicle, the physician would be obligated to report this fact to the health department.

This plan has several attractive features. The administrative machinery is established and available, the mandatory requirement protects the physician from violating the principle of breach of confidence, and the patient's rights are protected by an appeal panel. However, the preliminary draft for this type of legislation appears to be too complicated in its present form and will need revision to be acceptable to the medical profession.

It is interesting to observe that while the details of a program of reporting medically unsafe drivers are being worked out by Dr. Shanholtz and his associates, a similar procedure is advocated in Kentucky. Their plan will include physical-psychiatric examinations of persons in repeated accidents, offenders who present obvious defects to the traffic officer, as well as the mandatory reporting by physicians of patients with handicapping physical or mental defects likely to be dangerous drivers.

Your committee is also interested in encouraging a campaign of seat belt usage, under the slogan, "Seat Belts are Life Belts, Use Them".

Traffic fatalities thus far in 1963 are four percent higher than in a corresponding period of 1962. The challenge of this rising death toll is shared by too few people. Legislators and public officials are working diligently to promote highway safety, using all possible means of communication and persuasion; safety groups and councils are exploring all facets of the problem. Relentlessly the traffic fatality rate continues to soar.

The immediate answer seems to be to intensify the campaign for highway safety and driver education now so well carried on by official bodies, to strengthen and clarify laws relating to traffic safety, to urge strict enforcement and stern punishment of traffic offenders, and to arouse an apathetic and disinterested public to the seriousness of automobile driving.

It is the obligation of each member of The Medical Society of Virginia to actively support the Governor in his campaign to reduce highway fatalities, to cooperate with local and state organizations interested in the traffic

problem, and to personally use the rules of automobile safety in his daily life.

R. D. BUTTERWORTH, M.D.
DUPONT GUERRY, III, M.D.
ROBERT P. JONES, M.D.
WILLIAM H. PIFER, M.D.
LOUIS P. RIPLEY, M.D.
FRANCIS H. MCGOVERN, M.D., *Chairman*

Tuberculosis

Some years ago it was suggested that Catawba Sanatorium be closed. Two years ago an Economy Committee suggested that Blue Ridge be closed and that it be converted to a mental institution. Neither of these proposals was the result of a careful study of the needs of tuberculosis patients in the State. Some states have closed some tuberculosis institutions. The State of Virginia has closed four city institutions and the care of the tuberculous patients is now centered in the four State sanatoria.

Virginia is one of thirteen states with the worst tuberculosis problem. The sanatorium population has been declining slightly but with a more rapid turnover. In 1962 there was a total of 2290 patients in the sanatoria during the year. At the same time there were over 1,000 patients with positive sputum outside the sanatoria. If it were possible to hospitalize all of the patients who have active disease (positive sputum) and if we were able to hospitalize all those new patients who need hospitalization all beds would undoubtedly be filled. There is a fairly constant level of new patients which amounts to approximately 2,000 or over per year. This figure has increased over the past several years. The State Board of Health estimates there are at least 10,000 undiagnosed cases of tuberculosis in the State.

There is a wide difference in the length of stay of patients in the various sanatoria; for example, the average length of stay in Blue Ridge Sanatorium is 191.9 days compared to 210.5 days in Catawba Sanatorium. The two colored institutions keep their patients very much longer. In Ennion G. Williams Sanatorium the average stay is 315.6 days where the average stay in Piedmont Sanatorium is 511.2 days. This is probably partly due to advanced disease at admission. Perhaps one pertinent factor in this long stay may be that it is readily possible to obtain consultations and specialist treatment in Richmond, whereas it is extremely difficult to get consultations at Piedmont Sanatorium. Both Blue Ridge Sanatorium and Ennion G. Williams Hospital report a very large number of patient visits to the corresponding University Hospital.

The states which are still operating sanatoria, admit indigent patients with non-tuberculous chest diseases when beds are available, in lieu of treatment in a general hospital where the per diem cost might run twice that of a sanatoria. Indigent non-tuberculous chest cases are admitted for study and for short-term treatment in both North Carolina and Tennessee. The sanatorium must be safeguarded against admission of chronic cases for custodial care.

Of the several choices which the State Board of Health might take we believe that the proper action at this time

is to maintain the present sanatorium distribution but with certain modifications:

- (a) There should be more effort to hospitalize patients, particularly those with positive sputum and those who have been newly discovered.
- (b) Efforts should be redoubled in order to find the cases before they become far advanced and thus require longer sanatorium care. Perhaps the reorganization of The Virginia Tuberculosis Association may be helpful in better case finding.
- (c) The number of patients with drug resistant organisms is increasing all over the country. It is imperative to reduce the A.M.A. rate to prevent interruptions of treatment and subsequent resistance.

The Committee suggests at the present time it is best not to close any institution but rather to exert the utmost efforts to find cases as early as possible and hospitalize them in order to get them started on the cure of tuberculosis and to be sure that the patient can and will take the proper medications.

It should be possible to admit a few patients with non-tuberculous chest diseases who can be helped with a relatively short period of institutional care at greatly reduced cost. The staff at each of the tuberculosis institutions is trained in the diagnosis and care of chest diseases. Patients at Ennion G. Williams Hospital and Blue Ridge Sanatorium are fortunate in having ready access to the facilities of the large neighboring University Hospitals where they are able to obtain expert care, and where the patients are of value in both undergraduate and post graduate teaching.

E. C. DRASH, M.D., *Chairman*
JOHN A. SIMS, M.D.
EDWARD S. RAY, M.D.
ROBERT T. PIERCE, JR., M.D.
CHARLES L. SAVAGE, M.D.
E. C. HARPER, M.D.
GORDON B. TAYLOR, M.D.

Insurance

Although a number of new proposals were brought to the attention of your committee during the year, it was decided to proceed slowly and defer definite action until such time as the various plans could be given the consideration they deserve.

Most of the proposals were concerned with new and different approaches to investment type programs.

The committee did, however, recommend that a second sickness and accident program, underwritten by the Firemen's Fund, be approved. The recommendation for approval was adopted only after the committee was convinced that the new program would only supplement the existing sickness and accident plan underwritten by America Fore-Loyalty Group. It was made clear that the committee did not wish to have the Society sponsoring two plans which would be competitive in nature.

The new program features thirty- and sixty-day waiting periods and imposes no limit upon a participant reaching the age of seventy. The committee feels that this program will fill an existing need and urges the Council to give it approval.

It is good to report that the Society's professional liability insurance program continues its remarkable growth. Over seventy percent of the membership is now participating and experience remains fairly good. We hasten to mention, however, that the experience trend over the nation has not been encouraging during the past several years, and members are urged to report potential malpractice claims at the earliest possible moment.

Although many companies are seeking rate increases, premium rates (in all categories) for our program remain unchanged.

With reference to the Society's major hospital and professional overhead programs, we regret to report that loss ratios remain fairly high. The major hospital program reports a loss ratio as being ninety percent of net and the professional overhead program reports a loss ratio of fifty percent. It must be said, however, that programs of this kind are known to have experience records which vary greatly from year to year.

One question which continues to concern the committee is that having to do with group life programs. While interesting proposals continue to be received, there remains some question as to whether such programs would attract sufficient applicants to make them truly worthwhile. Perhaps a definite decision can be reached during the coming year.

ANDREW F. GIESEN, M.D., *Chairman*
W. D. LEWIS, M.D.
A. L. HERRING, JR., M.D.
HARRY B. STONE, JR., M.D.
C. M. MCCOY, M.D.
MACEY H. ROSENTHAL, M.D.
ROBERT C. HUNT, M.D.

National Emergency Medical Service

With the discovery of Russian missiles in Cuba a year ago, the business of disaster preparation overnight became one of our outstanding activities. Now, many months later, most of our population have gone back to "It Can't Happen Here"! Still it has been a busy year.

Last March flash floods in Southwest Virginia called for 40,000 typhoid and tetanus immunizations and a thorough inspection of water treatment plans with resulting decontamination and repair of plants and individual wells. In addition, Office of Emergency Planning approval was obtained in order that Federal Funds could be made available to the locality for this repair.

During the year all thirty-five of the Civil Defense Emergency Hospitals have been inspected and deficiencies, in most instances, corrected. In those hospitals with no deficiencies remaining Supply Addition #1 has been requested. This addition will give the hospital a 30-day operating capability. Applications for nine additional hospitals are on hand, awaiting the assigning of the new 1962 hospital now being assembled.

At the request of several local medical societies five orientation-demonstrations have been held for the benefit of physicians, nurses, ancillary personnel and rescue squads. Attendance at these demonstrations of the content and setting up of these hospitals was good with the exception of the physicians, who were conspicuous be-

cause of their small number. Demonstrations were held in Charlottesville, Winchester, Roanoke, Abingdon, and Richmond with a representative part of the hospital being set up for display.

The Virginia Hospital Association has compiled an excellent Hospital Disaster Plan which has been distributed to all hospitals in the State and can be used as a prototype for all types of disasters. In addition this committee was unanimous in approving a most comprehensive Hospital Checklist for disasters. This excellent Checklist plus the state plan should cover all disasters completely.

The Medical Self-Help program has been continually expanding. At this writing 223 classes have been held in Virginia and 3781 people trained. Early this spring many additional training kits were placed in operation and kits were also shipped to every high school in the State. We expect to continue this training program until the goal of one trained person in every family is reached.

Later this fall it is expected to initiate a course in biological and chemical warfare defense. As instructors one physician, one veterinarian, one bacteriologist, and one administrative assistant have taken an intensive course at the army chemical school at Fort McClellan in Alabama. Gas masks and detection kits are now on hand for these courses.

At this time there are 460 radiological monitoring stations in Virginia equipped and manned. Eight hospitals have received monitoring equipment. In March, a test run was carried out, and in a period of one and one-half hours 99% of alerted stations had reported as activated and only one instrument failed to function. The State Radiation Protection Committee continues to function.

There is a continuation of training of nurses, student nurses, sanitarians, medical and dental students under the MEND program, and close cooperation with the Adult Education program.

There are excellent relations among this committee, the local medical societies, other professional groups, the Public Health Service, and other sections of the Office of Civil Defense and the Office of Emergency Planning.

CHARLES R. RILEY, M.D.

E. CATO DRASH, M.D.

CHARLES D. SMITH, M.D.

FRANK A. KEARNEY, M.D.

MEYER I. KRISCHER, M.D.

COLEMAN BOOKER, M.D.

WILLIAM A. READ, M.D.

DAVID J. CRACOVANER, M.D.

W. ROSS SOUTHWARD, JR., M.D., *Chairman*

Child Health

A meeting of the Committee on Child Health was held in Richmond on April 2nd, and a number of very important matters were discussed at that time. It is believed that the minutes of this meeting will serve as the best possible committee report.

The meeting was attended by Dr. William P. Spencer, Chairman, Dr. Boyd Payne, Dr. W. N. Thompson, Dr. John W. Painter, Dr. Brock Hughes, Dr. Robert Shreve, Dr. Edwin B. Vaden, and Dr. Robert Anderson. Also

attending was Dr. James J. Dunne, representing the State Department of Health.

Dr. Spencer complimented Dr. Anderson for his work in connection with the very fine exhibit at the 1962 Annual Meeting of The Medical Society of Virginia in Washington (Second Interstate Scientific Assembly).

Note was taken of the work of the Fetus and Newborn Committee, which was commended for the great amount of information it had gathered.

Dr. Dunne was then introduced and advised the committee that it could be of considerable help to the Department of Health. He mentioned medical emergencies in schools and how best to cope with them. It was brought out that schools need assistance in this regard and are eager to obtain it. Dr. Dunne distributed a medical emergency guide for schools and requested the committee to give it careful consideration.

During the ensuing discussion, it was brought out the school principal should shoulder the responsibility of handling such emergencies. There was agreement, however, that the physician should always have the right to determine the place of treatment.

It was then moved and seconded that the committee endorse in principle the proposed guide for distribution to Virginia schools. The motion carried.

Dr. Dunne next discussed the problem posed by the child who has no physical examination over a long period of time, but is expected to participate in certain physical activities (gym class, minor sports, etc.). He raised the question as to how such a child could best be screened as to his fitness for participation. A very definite feeling existed that the committee should not endorse any tests, etc., supervised by lay personnel.

A motion was introduced which would have the committee state its disapproval of any list of calisthenics which leaves determination of a child's fitness, and participation in physical education, to laymen. The motion was seconded and adopted.

Dr. Dunne then discussed infant death forms and their importance. He stated that the forms needed review by the committee. Upon examination of the form, it was suggested that the initials "W. C. O." be replaced by the word "Race". It was also suggested that the term "Hrs. Oxygen" be replaced by the word "Oxygen". It was also recommended that the form be amended in order that placenta abnormalities could be listed. A recommendation was made that the form clarify the child's place in the family order.

It was moved that the infant death form be approved with the committee suggestions noted. The motion was seconded and adopted.

Dr. Spencer reported on efforts to increase utilization by Virginia's public schools of the Standard Health Examination Record prepared by the American Academy of Pediatrics. The committee was advised that the State Superintendent of Schools had been contacted and provided a supply of the record forms. It was not known whether distribution had been made to the various division superintendents. Mention was made of the fact that many of the individual school boards prefer to make their own decisions, and the thought was expressed that perhaps the record forms should be cleared through them.

It was agreed that someone should personally call on

the State Superintendent of Education and explain the committee's recommendation in greater detail. Dr. Spencer stated that he would be glad to call on the Superintendent as the committee's representative. A motion was then adopted that the Standard Health Examination Records again be recommended to the State Superintendent of Education and that distribution be made to the various division heads with his approval.

There followed a discussion concerning the new measles vaccines, and it was stated that six types are now, or will soon be, available for use. A question was raised as to whether the vaccines should be promoted as community projects, and it was learned that high cost and possible side effects were reasons why such projects might well be by-passed for the time being.

It was moved that the committee release a statement that it had considered the new vaccines for measles, but felt that since additional vaccines would soon be available, and since studies are now incomplete, it would prefer to withhold any recommendation to a later date.

After some discussion a substitute motion was offered placing the committee in agreement with the following statement by the Committee on Control of Infectious Diseases of the American Academy of Pediatrics:

"D. Recommendation for Vaccine Use

(1) *Age*

Over 90 percent of children will, at some time, have clinically evident measles. Marked by severe constitutional symptoms and a seven to fourteen day course, the disease is of additional concern because of secondary complications such as bronchopneumonia and encephalitis. The vast proportion of cases of measles occur among those under 15 years of age, particularly those aged 2 to 6 years; only occasionally do cases occur among adults.

Vaccine use then is indicated primarily for children; it should be administered to those without a history of measles, at nine months of age or as soon thereafter as possible. Those younger than nine months frequently fail to respond to immunization with the attenuated virus vaccine because of the presence of residual maternal antibody. Vaccination of adults is rarely indicated since all but a very small percentage are immune. Limited data indicate that in the adults, reactions to the vaccine approximate those seen in children.

(2) *High Risk Groups*

Immunization against measles is particularly recommended for those especially prone to develop serious complications should they acquire natural measles infection. Specifically, these include institutionalized children and those with cystic fibrosis, tuberculosis, heart disease, asthma and other chronic pulmonary diseases.

(3) *Prevention of Natural Measles Following Exposure*

Limited studies to date indicate that there is no protective effect conferred by either vaccine when given after exposure to the natural disease. However, live attenuated vaccine administered only a few days previous to exposure appears to confer substantial protection.

(4) *Community Programs*

Rarely would there appear to be a need in the United States for mass community immunization programs. Immunization should be carried out as indicated by private practitioners and through well-child conferences of established public health programs."

The substitute motion was seconded and adopted.

Next to be considered was a statement on the use of influenza vaccine released by the American Academy of Pediatrics. No action was taken.

Use of Sabin Oral Vaccine for polio was discussed at length and it was the consensus that the committee would be wise to make no change in its recommendation of last year.

A question was raised concerning what progress had been made in the development of premature care centers. It was learned that a very definite effort had been made to establish such centers in Southwest Virginia but lack of utilization had proved a big disappointment. It was mentioned that some small hospitals sometimes appear reluctant to release patients to such centers. Mentioned also was the tremendous importance of adequate nursing care in handling the premature infant.

The committee was next asked for its thoughts concerning the most desirable type of construction for schools. It was suggested that the relatively new pavilion type construction seems to offer some definite advantages. Electric heat was given general approval, as long as it is properly placed. Windowless construction was believed to have an advantage from a defense standpoint, but had certain drawbacks otherwise.

The committee regrets that minutes of its meetings held in 1961 and 1962 were not included in the committee reports of those years.

WILLIAM P. SPENCER, M.D., *Chairman*

Radiation Hazards

At the 1961 meeting of the House of Delegates of The Medical Society of Virginia, the House approved in principle proposals for legislation governing the use of radiation sources, which were submitted by this Committee. The proposals were the result of an analysis of data obtained in the course of the 1960 registration of radiation sources required by Senate Law No. 28, were in accord with experience in other states and with Atomic Energy Commission advice, and were wanted by the State Health Department. However, they did not get to the floor of the 1962 Legislature.

In preparation for the 1964 Legislature, the Council of The Medical Society of Virginia, at its September 20, 1962, meeting, instructed the Legislative Committee to cooperate with the Commissioner of Health in submitting and urging suitable legislation. A bill is ready for proposal.

GEORGE COOPER, JR., M.D., *Chairman*

HUNTER B. FRISCHKORN, M.D.

ROBERT E. MITCHELL, JR., M.D.

MACK I. SHANHOLTZ, M.D.

CHARLES D. SMITH, M.D.

Walter Reed Commission

The Walter Reed Birthplace continues to be maintained in good condition by the Walter Reed Community Improvement League.

A large portion of the roof had to be replaced this year. This was done at a cost of \$230.00. Most of the interior walls have to be re-plastered in the near future.

The Walter Reed Memorial Association, with headquarters in Washington, D.C., is again showing some interest in erecting a marker honoring Dr. Reed on U. S. Route 17 in Gloucester Court House.

RAYMOND S. BROWN, M.D., *Chairman*
THOMAS E. SMITH, M.D.
STERLING RANSOME, M.D.

To Confer with the U.M.W.A. Welfare Fund

The Liaison Committee to confer with the U. M. W. A. Welfare Fund met at the Sheraton-Park Hotel on October 15, 1962, at the request of Dr. John D. Winebrenner, Area Director of the U. M. W. A. Welfare Fund. Those members present were Drs. James M. Peery, Kinloch Nelson, Mack Shanholtz, Lewis Ingram, William Maloney, and Vincent Archer.

Dr. Winebrenner stated that there had been no particular problems arising during the year so there was just a general discussion of the disposal of the U. M. W. A. hospitals. No conclusions were reached and it was felt that the liaison had been quite satisfactory during the year. There have been no problems arising during the year since that time, thus no meeting has been called. It is felt that the relationship between the medical profession and the U. M. W. A. Welfare Fund has been quite compatible.

JAMES M. PEERY, M.D., *Chairman*

Rehabilitation

The Committee on Rehabilitation, which serves also as the Advisory Committee to the Vocational Rehabilitation Service of the State Department of Education, has been unusually active during the year.

Work has continued on revision of the total medical fee schedule of the Vocational Rehabilitation Service. During the year a sub-committee composed of six surgeon members of the committee worked with Vocational Rehabilitation personnel to list procedures that should be included in a surgical fee schedule and to select a nationally recognized schedule of relative values to be used as a basis for the rehabilitation schedule. By changing to the relative value system, it is felt that any change in the fee schedule will be on a proportionate basis in all areas rather than to make changes in one area alone. Work on the surgical fee schedule was completed and approved by the full committee in time for the new fees to become effective in all authorizations issued on or after July 1, 1963.

Committee members continue to provide consultative services to the professional staff of the Rehabilitation Service on rehabilitation cases involving complicated medical problems. Several members of the committee

have participated actively in staff training for rehabilitation counselors.

The committee continues to give professional guidance to the agency in the development of new procedures and policies concerned with the provision of physical restoration services for eligible vocationally handicapped individuals.

ROY M. HOOVER, M.D., *Chairman*
LEROY SMITH, M.D.
G. S. FITZ-HUGH, M.D.
F. J. WRIGHT, JR., M.D.
J. TREACY O'HANLAN, M.D.
JAMES L. THOMSON, M.D.
J. R. BLALOCK, M.D.
RENO PORTER, M.D.
CHARLES L. SAVAGE, M.D.
FRANK B. STAFFORD, M.D.
A. RAY DAWSON, M.D.
W. KYLE SMITH, M.D.
ALEXANDER MCCausLAND, M.D.
CARNEY C. PEARCE, JR., M.D.
GEORGE A. DUNCAN, M.D.

Alcoholism

It is safe to assume that during the past year there has been no reduction in the consumption of alcohol in Virginia. In fact, if the national trend has been followed, there has been an increase. If automobile accident deaths are an index, and over 50% of accidents are alcohol-flavored, if not alcohol caused—more alcohol has been consumed. Alcoholism, it is safe to assume, has been more evident. The number of alcoholics is proportionately greater. Our committee goes on record most vigorously that Virginia needs a hospital for alcoholics. The Division of Alcohol Studies and Rehabilitation, one of the activities of the State Department of Health, has shown a need of a 103 bed hospital in order to provide treatment for a much larger percentage of the state's alcoholic problem than has been cared for in the past. More adequate as well as larger facilities are needed.

Your committee on alcoholics has repeatedly emphasized that most of the work has to be done at a local level. Practicing physicians are asked to regard alcoholics as sick persons, worthy of help. The terms "alcoholic" and "drunk" are to be clearly demarcated in the physician's mind. The medical profession itself has several in its ranks who are "alcoholics" who need and deserve help. Please act accordingly, that is, with compassion.

We have long since realized that the cocktail hour is a fact of life. Since this is so, our only recourse is to reckon with it. The hour 5 PM-6 PM has become the "Zero Hour"!

"Between the dark and the daylight,
When our genius begins to sour;
Comes a pause in the day's occupation
That is know as the cocktail hour!"

Pressures when we are fatigued are more devastating to, and more exhaustive of, our personalities. Many of us succumb to the cocktail hour on this account. We doctors need to consider the medical aspects of American

habits. Alcohol produces a fantastic unity of body and mind coupled with that simultaneous gratification of opposites that logic and science deny to the sober man. Liquor clearly can serve to provide the *comfortable delusion* that such opposite feelings are temporarily resolved into unity. Man, for a time, escapes the regimentation imposed by reason and restraints. The painful realities become remote. Escapism is thus achieved through the medium of a "glass-enclosed tranquilizer". Excessive and uncontrolled use of alcoholic beverages may result.

Alcohol education has seemed the only answer to the challenge of ever-increasing alcoholism. Since the real danger from alcoholism is that it is a habit of excess, man's reason must be educated so that he can control his emotions so as to curb greed and desire.

A series on alcohol education has been carried over channel 8 TV, an NBC outlet, during the past year at twice a month intervals. This is a public service program, the time being donated by the local station, serving Richmond, Tri-City area (Petersburg, Colonial Heights, Hopewell) and surrounding area of 100 mile radius. Such programs can cover the State via air, with four or five telecasting stations, say, at Norfolk, Charlottesville, Roanoke and Alexandria (or Arlington).

Trips have also been made both in and out of State to sponsor or encourage AA chapters in their rehabilitation efforts, some of which are remarkably stimulating and gratifying. All physicians are urged to co-operate in every way possible with local AA groups. It is suggested that physicians attend AA meetings, both open and closed (at which M.D.s are welcome) as one way of showing interest and lending encouragement to this work. No report of a committee on alcoholism is complete without recognition of the work done by AA. Numerous references are made to AA, Al-Anon and Al-Ateen in the series on alcohol education. AA members staff many jobs all over our State quite dependably.

WILLIAM S. SLOAN, M.D., *Chairman*
JAMES ASA SHIELD, M.D.
EBBE C. HOFF, M.D.
WILLIAM F. GIBBS, M.D.
JOHN W. MASSEY, JR., M.D.

Advisory to Medical and Allied Organizations

There was only one called meeting of your Committee during the past year. This meeting was held with representatives of the Virginia Pharmaceutical Association on January 9th in Richmond, at the Headquarters of the Virginia Pharmaceutical Association. Those representing The Medical Society of Virginia were: Dr. DeLemore Birdsong, Chairman, Dr. Wyndham B. Blanton, Jr., and Dr. Shelton Horsley, III. In addition, Dr. Fletcher Wright, President of The Medical Society of Virginia, Dr. J. Morrison Hutcheson, a member of the Judicial Council of the American Medical Association, and Mr. Robert Howard, Secretary of The Medical Society of Virginia, were present. The Virginia Pharmaceutical Association was represented by Mr. Wallace S. Klein, Jr., Mr. Luther Blair, Mr. Charles Green, Mr. Reginald Rooke, Mr. Warren Weaver, and Mr. Ralph Ware.

The main subject discussed was that of physician ownership of pharmacies and/or pharmaceutical firms. The members from the Pharmaceutical Association stated that physician ownership of pharmacies had become quite a big problem in the Western States and that this was beginning to be a matter of concern in Virginia. Recently in Roanoke, a pharmacy had been opened by a physician who had hired a pharmacist to run the establishment, and from the standpoint of the Pharmaceutical Association this was unethical.

Dr. J. Morrison Hutcheson, a member of the Judicial Council of the American Medical Association, discussed this problem and it was brought out that according to the AMA Principle of Medical Ethics, ownership of a pharmacy was in itself not unethical as long as no exploitation of the patient existed.

He also stated that a recent recommendation of the Council that such ownership not be permitted in the physician's area of practice met with strong opposition. The AMA Council put off any definite recommendations until its June Meeting.

It was brought out in the AMA Principles of Medical Ethics that great responsibility is placed on the local medical society in policing these problems. The societies are expected to consider each case on its merits and determine whether there truly exists a violation of medical ethics.

The question was also raised concerning the right of a physician to own a building and lease it to a druggist. Here again it was recognized there are many factors that must be taken into consideration before arriving at any hard and fast facts, as certainly the owning of a building and leasing it is a perfectly normal business venture provided there is not pressure brought to influence patients to deal with this particular drug store, and if the rent is not geared on the profit of the drug store.

The last of the problems along this line was the business of a physician owning a controlling or major part of a pharmaceutical firm for the sale of drugs. Here again there are many facets that must be considered before one can say that this is ethical or unethical.

After a very thorough discussion the Committee To Work with Medical and Allied Organizations agreed that these matters should be referred to the Committee on Ethics for their consideration and recommendation. With the advice of Dr. J. Morrison Hutcheson, it was felt that these matters probably should be, and almost had to be, judged on their own merits at a local level, and the Ethics Committee after its consideration could possibly notify the various component medical societies of The Medical Society of Virginia of their decision on these matters.

The Committee would like to thank Bob Howard for his cooperation in arranging for the meeting of this Committee.

McLEMORE BIRDSONG, M.D., *Chairman*
WYNDHAM B. BLANTON, JR., M.D.
SHELTON HORSLEY, III, M.D.

Medical Education

Your Committee on Medical Education met at Society Headquarters on January 29 with all committee members

in attendance. Also in attendance were: Dr. Fletcher J. Wright, Jr., President of The Medical Society of Virginia, and Mr. Richard M. Nelson, Field Representative of the American Medical Association. Representing the Medical College of Virginia were: Dr. Richard Michaux, Dr. Kinloch Nelson, Mr. Eppa Hunton, IV, and Colonel John H. Heil, Jr. Representing the University of Virginia School of Medicine were: Dr. Alto Feller, Dr. Guy Hollifield and Dr. William Sandusky.

This committee believes that its most important function is to serve as an effective liaison body between the two medical schools and the physicians of Virginia, but emphasis is placed on the fact that it has neither the intention nor desire to dictate in any way whatsoever to the two medical schools.

In discussing some of the problems confronting our medical schools Dr. Maloney expressed satisfaction with the report of the special survey team which had inspected the Medical College of Virginia in early 1962. He also expressed his appreciation for the interest shown by The Medical Society of Virginia and also the manner in which the Society had conducted its own inquiry. It was agreed by all present that those problems which confront our schools are not peculiar to them but exist nationwide in varying degrees.

The committee learned with satisfaction that the suggestions made by many designed to bring about better communications and community relations are in effect and are successful. Dr. Crispell reminded the committee that many comments and complaints of practicing physicians never reach the ears of medical school officials and asked that these criticisms be promptly brought to the attention of the medical school faculty where every attempt will be made to correct them. Among other problems discussed, with the hope of finding a partial solution for some of them, were the continuing shortage of interns and residents, possible over-emphasis on matters connected with medical education, the failure of many graduates to grasp and develop proper motives for the practice of medicine and the failure of some faculty members to take more active roles in organized medicine.

It was agreed that the house staff problem is acute because there are not enough interns at the present time and the future holds little encouragement. This shortage of interns and residents can be attributed in part to the tremendous growth of hospitals in recent years and also to the heavy increase in population. It was suggested that many hospitals could partially solve this problem by appointing a full-time Director of Medical Education and developing a "set" faculty which would devote approximately three-fourths of its time to education. It was noted with regret that rotating internships have apparently lost much of their appeal because so many young physicians are now married and dislike being separated from their families.

It was further suggested that better liaison between private practitioners and medical school faculties would be possible by having both Deans present annual reports to the House of Delegates. This suggestion was well received with another suggestion that a series of articles in the Virginia Medical Monthly could be used to considerable advantage.

It has been suggested from time to time that The Medical Society of Virginia sponsor annual scholarships in addition to its contribution to the guaranteed loan fund of AMA. The AMA program is highly successful and we are particularly impressed by the fact that each dollar contributed results in \$12.00 being made available for student loans. Because of its success and because of the uncertainty of the amount of money which can be made available by The Medical Society of Virginia the committee recommended that further consideration of scholarships be deferred until it can determine what funds will be available at the end of the fiscal year.

We have been requested to give serious consideration to asking The Medical Society of Virginia to take an active role in post-graduate education. Emphasis was placed on the need for financial support of the post-graduate education programs sponsored and presented by the two schools. Your committee wholeheartedly approves such a worthwhile project and endorses it to the extent that funds will permit.

It is the intention of your Committee on Medical Education to meet at least once annually or as often as problems referred to it merit special meetings.

ALLEN BARKER, M.D., *Chairman*
RUSSELL COX, M.D.
KENNETH CRISPELL, M.D.
MALCOLM H. HARRIS, M.D.
WILLIAM F. MALONEY, M.D.
JOHN C. WATSON, M.D.

Liaison with Nurse Examiners and Organized Nursing

We met as usual with the Virginia Nurse Examiners and had their full support. We learned that in the thirty-two programs training professional nurses in Virginia, the total enrollment was 2,351, an increase of 82 over the previous year. Twenty-five of these programs with an enrollment of 1,882 are the usual Diploma or R.N. Programs. Four are Associate Degree Programs and three are Baccalaureate Degree Programs.

The number of professional nurses in Virginia in 1962 was 10,350.

The number of professional nurses registered by examination in 1962 was 596, a decrease of 6 from the year before.

The Nurse Examiners in an increased effort to improve nurse education in Virginia, have employed an expert in nursing education to help in the inspection of the schools for the purpose of improving their curricula, faculties, facilities, and ability to educate nurses.

Virginia gained 244 nurses by interstate licensure in 1962.

In practical nursing, there are twenty-four accredited schools in Virginia with a total enrollment of 727, an increase of one over 1961.

Virginia has 4,411 practical nurses in 1962, an increase of 412 over 1961.

The percentage of failures on Professional Nurse Licensing Examinations in 1962 was 26.6, higher than in 1961. The percentage of failures on Practical Nurse Licensing Examinations in 1962 was 6.1, lower than in 1961.

The Nurse Examiners have made survey and consultation visits with the nursing schools in an effort to improve them, have held two regional work-educational conferences, and have participated in the Virginia Nursing Association Program in a symposium on professional nursing standards.

Your committee conversed extensively with the Board and came to the conclusion that they are making every effort to improve the quality of nurses and nursing in Virginia. It is apparent to us that there is no discrimination against the smaller hospital diploma nurse program but rather, a distinct desire on the part of the Nurse Examiners to improve existing programs as these are the mainstay of nurse education in Virginia, producing 70% of our nurses. At the same time, all such schools must make the necessary effort to educate their students well in order to conform to national standards for interstate licensure. The examinations are made up at the national level even as are medical examinations, with all states participating in the making.

Your committee conferred with officers of the Virginia Nurses Association, again with full attendance.

We learned that accreditation of nursing homes is still in the discussion stage and what the wishes of the V.N.A. are in the matter. We learned that the American Nurses Association has not yet agreed to Goal III to the effect that a baccalaureate program is to be the crux of nursing education. We learned that the V.N.A. offers a Central Placement Service for Nurses, gratis.

Consultation with the Virginia Nurses Association revealed that presently, in Virginia, an M.D. is the only person legally qualified to do a veni-puncture. It was concluded by this group that a legislative committee of The Medical Society of Virginia should attempt to rewrite Virginia law so that properly trained nursing or technical personnel may legally carry out veni-puncture for the taking of blood and for certain infusions as well as making insertions of Levine tubes and also carry out closed chest cardiac massage when indicated.

The last mentioned is the only action indicated by this committee as desirable for consideration.

JOHN R. MAPP, M.D., *Chairman*
JOHN P. LYNCH, M.D.
JAMES M. MOSS, M.D.
BRADFORD S. BENNETT, M.D.
DANIEL N. MOHLER, M.D.

Conservation of Sight

The Committee on Conservation of Sight has relatively little to report for the current year. The Committee has, however, been interested in the early detection of glaucoma and has strongly backed the Virginia Society for the Prevention of Blindness screening studies which have been carried out in several localities. It is advocated that such glaucoma screening clinics be continued in the future with the backing of The Medical Society of Virginia. The Virginia Eye, Ear, Nose and Throat Society has recently endorsed this program and has advised further clinics of a like nature.

DUPONT GUERRY, III, M.D., *Chairman*

Liaison to State Bar

Your committee has held one meeting during the year of 1962-1963. It was held on Saturday, April 6, 1963, at the headquarters of Society, at which a medical malpractice case was heard by the Panel, consisting of the doctor members of your committee and the attorney members of the Liaison Committee of the State Bar. The decision of the Panel was that it was not likely that the physician involved was guilty of any negligence.

Your committee feels that it is serving a useful purpose, but that it can be of more service to the legal and medical professions by two simple expedients:

Firstly, having each member of the Society acquaint himself and, in cases where needed, acquaint attorneys with the Standards of Principles governing Lawyers and Physicians in the Commonwealth of Virginia; and secondly, acquainting himself with the medical malpractice screening panel plan and using his influence and good offices to see that it is used whenever an applicable situation comes to his attention.

EDWARD E. HADDOCK, M.D., *Chairman*
WILLIAM DOLAN, M.D.
T. ADDISON MORGAN, M.D.
JOHN Q. HATTEN, M.D.
CHARLES W. WHITMORE, M.D.
G. T. MANN, M.D.
JOHN O. BOYD, M.D.
CHARLES J. FRANKEL, M.D.

Aging and Chronically Ill

We have had two or three meetings during the year in conjunction with the Virginia Joint Council to Improve the Health Care of the Aged. At one meeting, Mr. Painter, director of welfare for the State of Virginia, and his staff discussed ways that the Kerr-Mills legislation could be implemented in Virginia, giving us some of their future plans. We got the impression that Virginia was behind other states in availing themselves of this Kerr-Mills approach and that unless we can get a proper presentation before the coming legislature for funds to get this program under way very little will be accomplished.

Your chairman has made several talks to representative citizens and organizations on the dangers of Medicare through Social Security, and the Virginia Medical Monthly has published an editorial entitled, "Medicare—A New Social Disease". The committee feels that Operation Hometown and VaMPAC will be very useful vehicles in which the Medical Society can continue to fight the inroads of the federal government on the practice of medicine, particularly among the elderly. We feel that we should not let up on our efforts to kill the pernicious King-Anderson legislation in this Congress, if it comes to vote, and in subsequent Congresses, if action is delayed.

We want to compliment the Executive Secretary of The Medical Society of Virginia for his untiring efforts in keeping us informed through the Newsletter. We feel this has been a very valuable weapon in bringing the facts before the members of the Society. We also urge

every doctor in the state to lend his financial and personal support to VaMPAC.

JOHN P. LYNCH, M.D., *Chairman*
H. B. MULHOLLAND, M.D.
ROBERT DANIEL KEELING, M.D.
MACK I. SHANHOLTZ, M.D.
MALCOLM H. HARRIS, M.D.
JAMES M. MACMILLAN, M.D.
IRVING BERLIN, M.D.

Cancer

The Cancer Committee met at the Hotel Roanoke on April 9, 1963. The following were present: Dr. Claiborne W. Fitchett, Chairman, Dr. Herbert C. Jones, Jr., Dr. Mack I. Shanholtz, Dr. W. Ross Southward, Jr., Dr. Walter C. Fitzgerald, Dr. John R. Kight, Dr. Eskey, Dr. John D. Adams, Dr. Carey A. Stone, Jr., and Mr. Bernard Woodall of the American Cancer Society.

A brief discussion was held on the establishment of a tumor clinic in Pulaski. The committee voted to communicate with physicians in Pulaski and encourage them to establish such a clinic. It is to be emphasized that a clinic should meet at least twice a month and that at each meeting there should be a radiologist, a pathologist, and at least one practicing physician, preferably a general surgeon. These meetings should be conducted in accordance with regulations set down by the American College of Surgeons whenever possible. It is felt, however, that tumor clinics of this nature might not wish to be approved by the College of Surgeons at this time.

The chairman stated he had also had an inquiry concerning the establishment of a tumor clinic in Emporia. The committee instructed the chairman to communicate with the physicians in Emporia and instruct them in a similar fashion as the Pulaski group. Mr. Woodall said that in the past year the American Cancer Society, Virginia Division, had received some inquiries from physicians at Virginia Beach and Franklin about tumor clinics, but these had been unofficial and no direct letters or requests have been forthcoming. The committee felt that since no direct inquiry had been made, no action was necessary in these two instances.

The chairman then reported that there were a number of hospitals in Virginia that had been approved for the training of interns and residents, but did not have approved cancer programs either by the College of Surgeons or by this committee. The Cancer Committee voted that the chairman of the committee should communicate with some of these hospitals and encourage the establishment of clinics whenever possible.

The chairman of the committee then brought up for discussion the problem of the pay of directors of tumor clinics. It is the present policy to pay these directors \$25 per tumor clinic session. It has been the custom over the years for the directors not to accept this money but to put it in the tumor clinics' funds to be used for other purposes. It was felt that under modern conditions tumor clinic directors should be informed that they should keep this money, but in doing so they would be expected to put in more time organizing and conducting these clinics. A general discussion was then held as to what proper method should be made to select directors of tumor

clinics. It was the hope of this committee that a tumor clinic director could be selected in such manner that he would be willing to put in the time necessary to conduct the clinic, and for this service he would be paid. Dr. Shanholtz felt that this was an excellent idea. He also stated that, in the experience of the Health Department, they had found in maternal welfare clinics and certain other types of clinics throughout the State, that it was necessary to pay physicians in order to obtain the desired level of services. He also stated that the amount of money paid for a director for each tumor clinic session was not fixed. He went on to explain that at one time it was as low as \$7.50 per session and at present is \$25 per session. He added that he saw no reason why it might not be elevated to \$50 per session. The Cancer Committee then voted to instruct tumor clinic directors to keep their pay and also to ask each tumor clinic to re-evaluate method of selection of directors.

Mr. Woodall and Dr. Southward then reported that the tumor clinic in the Fauquier Hospital was no longer functioning. Likewise, the tumor clinic in Bedford is no longer functioning. A short discussion was then held as to why these clinics had ceased to function and the Cancer Committee stated that before removing them from the approved list of tumor clinics in Virginia the chairman of the committee should communicate with the past directors of these clinics to see if there is anything we can do to have them re-established.

It was likewise reported that the tumor clinic in Richlands and in Radford were having some difficulties. In Richlands the Tri-County Tumor Clinic has not been functioning properly, but is sending reports to the State Health Department. The tumor clinic in Radford is functioning but is not sending reports. Dr. Stone, a member of this committee, said he will attempt to look into the problem at Radford and report to the committee at a later date. Following discussion on these clinics, the Cancer Committee voted and instructed its Chairman to appoint a special sub-committee to investigate the functions of all four clinics. The chairman has appointed Dr. Herbert Jones, Charlottesville, as chairman of this sub-committee, and is going to ask Dr. Stone and Dr. Fitzgerald to serve with him.

CLAIBORNE W. FITCHETT, M.D., *Chairman*

Medicare

Your Committee met three times during the past year, and there were indications that many physicians are still not too familiar with Medicare policy and procedure. Some sixty cases requiring special study were reviewed—a sharp increase over the past two years.

The Committee has found that when physicians charge their usual fees, they encounter very little difficulty. Their usual fees will most always fall within the Medicare schedule.

We feel quite sure that physicians sometimes wonder just how this Committee arrives at some of its recommendations. The Committee must follow certain guidelines set forth in the Medicare program and, only in the most exceptional of cases, can it deviate from established policy.

Since it is not possible for the Committee to meet each

month, there are often unavoidable delays in processing those cases requiring special study. Physicians concerned have been most patient and understanding, and the Committee takes this opportunity to express its sincere appreciation.

W. LINWOOD BALL, M.D., *Chairman*
HUNTER B. FRISCHKORN, M.D.
RICHARD MICHAUX, M.D.
WILLIAM E. BYRD, M.D.
VIRGIL R. MAY, JR., M.D.

DELEGATES TO 1963 MEETING THE MEDICAL SOCIETY OF VIRGINIA

Where no name is listed it is indicative that no delegate or alternate was reported in time for publication.

<i>Delegates</i>	<i>Alternates</i>
Accomack	
Dr. Walter Eskridge	Dr. Donald F. Fletcher
Albemarle	
Alexandria	
Dr. F. Preston Titus	Dr. Wm. J. Weaver, Jr.
Dr. John C. Watson	Dr. C. Albert Hudson
Dr. James M. Moss	Dr. H. H. Ferrell, Jr.
Alleghany-Bath	
Dr. Wm. J. Ellis	Dr. John D. Adams
Dr. S. P. Hileman	Dr. Wallace C. Nunley
Dr. E. M. Bowles, Jr.	Dr. Charles A. Ballou, III
Dr. Unity M. Powell	Dr. Thomas N. Warren
Amherst-Nelson	
Arlington	
Dr. Thomas A. McGavin	Dr. Robert L. Norment
Dr. K. Charles Latven	
Dr. Robert B. Neu	
Dr. Joseph O. Romness	
Augusta	
Dr. Boyd H. Payne	Dr. J. Treacy O'Hanlan
Dr. James A. Higgs, Jr.	Dr. Wm. G. Painter
Dr. Charles L. Savage	Dr. Theron R. Rolston
Bedford	
Botetourt	
Buchanan-Dickenson	
Dr. J. C. Moore	Dr. Ralph W. Hess
Dr. Thos. D. McDonald	Dr. J. P. Sutherland
Charlotte	
Culpeper	
Danville-Pittsylvania	
Dr. F. H. McGovern	Dr. Walter Fitzgerald
Dr. Ralph R. Landes	Dr. B. H. Byerly
Fairfax	
Dr. Carl P. Parker, Jr.	
Dr. C. Barrie Cook	
Dr. John E. Prominski	
Dr. Henry G. Bryan	

<i>Delegates</i>	<i>Alternates</i>
Fauquier	
Dr. James L. Dellinger	Dr. James B. Hutt
Floyd	
Dr. F. Clyde Bedsaul	Dr. Robert C. Patten
Fourth District	
Dr. James L. Hamner	Dr. James T. O'Neal
Dr. Clyde G. O'Brian	Dr. Earl M. Bane
Dr. William B. Bishop	Dr. C. C. Ashby
Dr. Robert S. Smith	Dr. John S. Prince
Dr. Jefferson B. Kiser	Dr. Harry B. Showalter
Dr. Emerson D. Baugh, Jr.	Dr. Wm. A. Shelton
Dr. C. C. Nuckols	Dr. Ray A. Moore, Jr.
Dr. Robert W. Bradley	Dr. Kasper Kauffman
Dr. Anthony J. Munoz	Dr. Francis R. Payne
Dr. Ben H. Knight	
Dr. Maurice S. Rosenberg	
Dr. William Grossman	
Dr. A. Epes Harris, Jr.	
Fredericksburg	
Halifax	
Dr. William R. Watkins	Dr. T. H. Crowder, Jr.
Hampton	
Hanover	
James River	
Dr. J. H. Yeatman	Dr. A. C. Whitley
Dr. Russell N. Snead	Dr. W. S. Lloyd
Dr. W. A. Pennington	Dr. Garland Dyches
Lee	
Dr. G. C. Sumpter	Dr. G. B. Setzler
Loudoun	
Louisa	
Lynchburg Academy	
Mid-Tidewater	
Dr. Shirley Carter Olsson	Dr. Wm. H. Hosfield
Dr. A. W. Lewis, Sr.	Dr. Douglas E. Andrews
Dr. Joseph W. Chinn	Dr. James C. Rahman
Dr. Carl A. Broadus	Dr. Werner Gatzek
Dr. A. L. Van Name, Jr.	Dr. F. M. Kraler
Dr. Thomas E. Smith	Dr. H. L. Shinn
Dr. Sterling N. Ransone	
Dr. Malcolm H. Harris	

*Delegates**Alternates***Newport News**

Dr. William A. Read	Dr. J. Q. Hatten
Dr. Saml. H. Mirmelstein	Dr. Thomas C. Lawford
Dr. E. B. Mewborne	Dr. J. W. Massey, Jr.
Dr. F. Ashton Carmines	Dr. I. F. Nesbitt

Norfolk

Dr. R. Bryan Grinnan, Jr.	Dr. Mallory S. Andrews
Dr. Altar Laibstain	Dr. Jerome Adamson
Dr. Robert Faulconer	Dr. Gervas Taylor
	Dr. Richard C. Reed, Jr.
	Dr. T. Winston Gouldin
	Dr. William E. Boyd
	Dr. R. Cecil Chapman

Northampton

Dr. William S. Burton	Dr. John R. Mapp
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Northern Neck**Northern Virginia**

Dr. James Holsinger	Dr. J. S. Shaver
Dr. D. H. McNeill, Jr.	Dr. J. M. W. White
Dr. Warren C. Gregory	Dr. Elizabeth Sherman
Dr. John P. Snead, Jr.	Dr. H. P. Maccubbin
Dr. Frank E. Tappan	Dr. C. L. Riley
	Dr. Carroll Iden

Orange

Dr. H. C. McCoy	Dr. R. S. LeGarde
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Patrick-Henry

Dr. Edwin T. McNamee	Dr. I. V. Magal
Dr. S. W. Adams, Jr.	Dr. L. A. Faudree
Dr. William D. Lewis	Dr. Harry C. Foster, Jr.

Portsmouth

Dr. William S. Terry	Dr. L. L. Davis, Jr.
Dr. Neil Callahan	Dr. Wm. B. Pope, Jr.

Princess Anne

Dr. J. A. White	Dr. A. M. Dickson
Dr. James P. Charlton	Dr. J. S. Garrison

Richmond Academy

Dr. William A. Johns	Dr. E. Bowie Shepherd
Dr. Frank M. Blanton	Dr. Joseph Parker
Dr. Wm. H. Harris, Jr.	Dr. John Grinels
Dr. William S. Dingledine	Dr. John Catlett
Dr. R. Campbell Manson	Dr. Randolph Trice

*Delegates**Alternates*

Dr. John P. Lynch	Dr. Wm. K. Smith, Jr.
Dr. J. Robert Massie, Jr.	Dr. William Tucker
Dr. Adney K. Sutphin	Dr. Robley Bates
Dr. H. Fairfax Conquest	Dr. Owen Gwathmey
Dr. Elam C. Toone, Jr.	Dr. Ernest P. Buxton
Dr. Carrington Williams, Jr.	Dr. Howard McCue
Dr. William C. Gill, Jr.	Dr. Henry P. Royster
Dr. R. C. Siersema	Dr. Russell V. Bowers
	Dr. Russell McAllister

Roanoke Academy**Rockbridge**

Dr. Edward V. Brush	Dr. Lewis A. Micou
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Rockingham

Dr. John T. Glick, Jr.
Dr. George M. Nipe

Scott**Southwestern Virginia**

Dr. W. W. Walton	Dr. C. W. Hickam
Dr. C. E. Stark	Dr. W. R. Chitwood
Dr. G. B. Kegley	Dr. C. D. Moore, Jr.
Dr. J. H. Early, Jr.	Dr. J. G. Cox
Dr. C. O. Finne	Dr. J. A. Soyars
Dr. S. A. Tuck	Dr. L. E. Dunman
Dr. J. S. Shaffer	Dr. Stuart H. Catron
Dr. C. W. Richardson	Dr. T. R. Jarvis, Jr.
Dr. Dave Phlegar	Dr. Garrett Dalton
Dr. William M. Gammon	Dr. Lawrence Stringfellow

Tazewell

Dr. R. A. Abernathy, Jr.	Dr. James M. Peery
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Tri-County

Dr. George Carroll	Dr. Phillip Thomas
Dr. T. Addison Morgan	Dr. J. A. Murray
Dr. F. Ivan Steele	Dr. Hugh Warren
Dr. W. H. Chapman, Jr.	Dr. Edward C. Joyner

Williamsburg-James City

Dr. Hugh G. Stokes	Dr. George J. Oliver
Dr. George J. Chohany	Dr. C. J. Casey

Wise

Dr. J. M. Straughan	Dr. L. K. Ingram
Dr. C. H. Henderson	

Presidents of The Medical Society of Virginia

PRESIDENT	YEAR OF MEETING	PRESIDENT	YEAR OF MEETING
*Dr. James McClurg, Richmond	1821	*Dr. Lomax Gwathmey, Norfolk	1906
*Dr. William Foushee, Richmond	1822	*Dr. Paul B. Barringer, Charlottesville	1907
*Dr. William Foushee, Richmond	1823	*Dr. Wm. F. Drewry, Petersburg	1908
*Dr. James Henderson, Richmond	1824	*Dr. Stuart McGuire, Richmond	1909
Meetings Discontinued		*Dr. E. T. Brady, Abingdon	1910
*Dr. Robert William Haxall, Richmond	1841	*Dr. O. C. Wright, Jarratt	1911
*Dr. Robert William Haxall, Richmond	1842	*Dr. Hugh M. Taylor, Richmond	1912
*Dr. Frederick Marx, Richmond	1843	*Dr. Southgate Leigh, Norfolk	1913
*Dr. Thomas Nelson, Richmond	1844	*Dr. Stephen Harnsberger, Catlett	1914
*Dr. William A. Patteson, Richmond	1845	*Dr. Samuel Lile, Lynchburg	1915
*Dr. William A. Patteson, Richmond	1846	*Dr. Joseph A. White, Richmond	1916
*Dr. John A. Cunningham, Richmond	1847	*Dr. Geo. A. Stover, South Boston	1917
*Dr. William A. Patteson, Richmond	1848	*Dr. Ennion G. Williams, Richmond	1918†
	1849	*Dr. Ennion G. Williams, Richmond	1919
*Dr. Robert William Haxall, Richmond	1850	*Dr. Paulus A. Irving, Farmville	1920
*Dr. Beverley R. Wellford, Fredericksburg	1851	*Dr. Alfred L. Gray, Richmond	1921
*Dr. James Beale, Richmond	1852	*Dr. E. C. S. Taliaferro, Norfolk	1922
*Dr. Thomas P. Atkinson, Danville	1853	*Dr. John Staige Davis, University	1923
*Dr. Carter P. Johnson, Richmond	1854	*Dr. W. W. Chaffin, Pulaski	1924
*Dr. H. C. Worsham, Dinwiddie	1855	*Dr. Hunter H. McGuire, Winchester	1925
*Dr. H. C. Worsham, Dinwiddie	1856	*Dr. W. L. Harris, Norfolk	1926
*Dr. James Bolton, Richmond	1857	*Dr. J. Shelton Horsley, Richmond	1927
*Dr. Levin S. Joynes, Richmond	1858	*Dr. J. W. Preston, Roanoke	1928
Meetings Discontinued		*Dr. J. Bolling Jones, Petersburg	1929
*Dr. R. S. Payne, Lynchburg	1870	*Dr. Charles R. Grandy, Norfolk	1930
*Dr. R. S. Payne, Lynchburg	1871	*Dr. J. Allison Hodges, Richmond	1931
*Dr. A. M. Fauntleroy, Staunton	1872	*Dr. I. C. Harrison, Danville	1932
*Dr. Harvey Black, Blacksburg	1873	*Dr. J. C. Flippin, University	1933
*Dr. A. G. Tebault, London Bridge	1874	*Dr. R. D. Bates, Newtown	1934
*Dr. S. C. Gleaves, Wytheville	1875	*Dr. F. H. Smith, Abingdon	1935
*Dr. F. D. Cunningham, Richmond	1876	*Dr. P. St. L. Moncure, Norfolk	1936
*Dr. J. L. Cabell, University	1877	Dr. J. M. Hutcheson, Richmond	1937
*Dr. J. H. Claiborne, Petersburg	1878	*Dr. G. F. Simpson, Purcellville	1938
*Dr. L. S. Joynes, Richmond	1879	Dr. A. F. Robertson, Jr., Staunton	1939
*Dr. Henry Latham, Lynchburg	1880	*Dr. H. H. Trout, Roanoke	1940
*Dr. Hunter McGuire, Richmond	1881	Dr. W. B. Martin, Norfolk	1941
*Dr. G. W. Semple, Hampton	1882	*Dr. Roshier W. Miller, Richmond	1942
*Dr. W. D. Cooper, Morrisville	1883	Dr. J. M. Emmett, Clifton Forge	1943
*Dr. J. E. Chancellor, Charlottesville	1884	*Dr. C. B. Bowyer, Stonega	1944
*Dr. S. K. Jackson, Norfolk	1885	Dr. H. B. Mulholland, Charlottesville	1945
*Dr. Rawley W. Martin, Chatham	1886	*Dr. Julian L. Rawls, Norfolk	1946
*Dr. Bedford Brown, Alexandria	1887	*Dr. W. L. Powell, Roanoke	1947
*Dr. Benjamin Blackford, Lynchburg	1888	*Dr. Guy R. Fisher, Staunton	1948
*Dr. E. W. Row, Orange C. H.	1889	*Dr. M. Pierce Rucker, Richmond	1949
*Dr. Oscar Wiley, Salem	1890	*Dr. W. C. Caudill, Pearisburg	1950
*Dr. W. W. Parker, Richmond	1891	Dr. C. Lydon Harrell, Norfolk	1951
*Dr. H. Grey Latham, Lynchburg	1892	Dr. John T. T. Hundley, Lynchburg	1952
*Dr. Herbert M. Nash, Norfolk	1893	Dr. James L. Hamner, Mannboro	1953
*Dr. Wm. P. McGuire, Winchester	1894	Dr. V. W. Archer, Charlottesville	1954
*Dr. Robt. J. Preston, Abingdon	1895	Dr. Carrington Williams, Richmond	1955
*Dr. Wm. L. Robinson, Danville	1896	Dr. James P. King, Radford	1956
*Dr. Geo. Ben Johnston, Richmond	1897	Dr. James D. Hagood, Clover	1957
*Dr. Lewis E. Harvie, Danville	1898	Dr. H. C. Bates, Arlington	1958
*Dr. Jacob Michaux, Richmond	1899	Dr. W. P. Adams, Norfolk	1959
*Dr. Hugh T. Nelson, Charlottesville	1900	Dr. Allen Barker, Roanoke	1960
*Dr. J. R. Gildersleeve, Tazewell	1901	Dr. Guy W. Horsley, Richmond	1961
*Dr. R. S. Martin, Stuart	1902	Dr. Russell V. Buxton, Newport News	1962
*Dr. J. N. Upshur, Richmond	1903	Dr. Fletcher J. Wright, Petersburg	1963
*Dr. Joseph A. Gale, Roanoke	1904		
*Dr. Wm. S. Christian, Urbanna	1905		

*Deceased.

†Owing to influenza epidemic during World War I, the council met in 1918, and Dr. Williams was continued as President.

Woman's Auxiliary. . .

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A Message From the President

The forty-first year of the Woman's Auxiliary to The Medical Society of Virginia is drawing to a close and with it my term of office as your president. This year has been most rewarding, stimulating and challenging. It has been also, at times, frustrating, disconcerting and tiring—but in all a very enjoyable experience.

I know that I was the one who gained the most from my visits with you as I traveled the State on auxiliary business. My life has been enriched by the many friendships made possible by your confidence in me. I thank each of you for the privilege of working with you in the service of the medical profession.

The Convention will be held this year at the Hotel Roanoke, October 6-9. Mrs. Charles B. Bray, Jr., general chariman, and Mrs. P. A. Wallenborn, co-chairman, have been working with their committee on arrangements to plan a wonderful convention for us. We love going to Roanoke, so plan now to go and enjoy the auxiliary fellowship and attend the meetings.

Our National President, Mrs. C. Rodney Stoltz, regrets that she will be unable to be with us because the Chicago Conference for national officers, chairmen and state presidents and presidents-elect falls on the same date. However, we have been promised a national representative who will bring us a message. The Southern President, Mrs. Elias Margo of Oklahoma City, has been invited and we trust she will be able to come.

We feel that this has been a successful and progressive year for the auxiliary. We have more members and a larger contributions to A.M.A.-E.R.F. with every auxiliary participating. We are continuing our work in health careers and a loan has been made from the Student Loan Fund. More members are aware of the work that must be done in the legislative and political fields, if the medical profession is to remain free from government intrusion.

Won't you come to Roanoke in October and receive

full reports on all our projects? My very best wishes to each of you.

DIMPLE GRAVATT (Mrs. A. B., Jr.)

PROGRAM

of the

FORTY-FIRST ANNUAL CONVENTION

Roanoke, Virginia

October 6-9, 1963

Headquarters—Hotel Roanoke

A cordial invitation is extended to all members of the Woman's Auxiliary to The Medical Society of Virginia, their guests and the wives of physicians attending the convention to participate in all social functions and to attend the general meeting of the Auxiliary.

Information and tickets for the luncheon will be available at the registration desk. Luncheon reservations will close at 10:00 A. M. Monday.

Registration Hours

Sunday, October 6 ----- 4:00 P.M. to 8:00 P.M.
Monday, October 7 ----- 9:00 A.M. to 12 noon and
3:00 P.M. to 5:00 P.M.

The Hospitality Room will be in the Alcove beyond the Writing Room.

Coffee Hours

Monday, October 7-----9:00 A.M. to 12 noon
Tuesday, October 8-----9:30 A.M. to 11:30 A.M.

Sunday, October 6

4:00 P.M.—Pre-Convention Board Meeting, Pine Room, Hotel Roanoke. All State Officers, Directors, Committee Chairmen, County Presidents and Presidents-Elect are expected to attend.

Mrs. A. Broadus Gravatt, Jr., President, presiding.

Monday, October 7

9:30 A.M.—Formal opening of the Forty-first Annual Convention of the Woman's Auxiliary to The Medical Society of Virginia, Pine Room.

Mrs. A. Broadus Gravatt, Jr., President, presiding.

Invocation—Mrs. Hawes Campbell, Richmond, Chaplain

Pledge of Loyalty:

I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation, and ever sustain its high ideals.

Address of Welcome—Mrs. R. Earle Glendy, wife of the President of the Roanoke Academy of Medicine.

Response—Mrs. Michael A. Puzak, Arlington

Convention Announcements—Mrs. Charles B. Bray, Jr.,
Roanoke, General Chairman

Roll Call of Auxiliaries—Mrs. R. L. Norment, Arlington,
Recording Secretary

Minutes of the Fortieth Annual Convention—Mrs. Norment

Presentation of Honored Guests

National Representative

Mrs. Elias Margo, President of the Woman's Auxiliary to the Southern Medical Association

Presentation of the President of The Medical Society of Virginia

Dr. Fletcher J. Wright, Jr.

Report of the Treasurer—Mrs. Walter A. Eskridge,
Northampton-Accomack

Unfinished Business

New Business

Recommendations from the Board

Remarks by the President and Recognition of State Officers and Committee Chairmen

Report of Delegates to the Woman's Auxiliary to the American Medical Association, Mrs. Malcolm H. Harris, Mid-Tidewater

Report of Credentials Committee—Mrs. E. J. Palmer,
Roanoke

Report of the Nominating Committee—Mrs. William F. Grigg, Jr., Richmond, Chairman

Election of Officers

Courtesy Resolutions—Mrs. W. Fredric Delp, Roanoke

In Memoriam—Mrs. Norman R. Tingle, Northern Neck

Adjournment

12:30 P.M.—Inaugural Luncheon, Shenandoah Club

Mrs. A. Broadus Gravatt, Jr., President, presiding

Invocation—Mrs. Hawes Campbell

Luncheon

Presentation of Honored Guests

Address by National Representative

Installation of Officers—National Representative

Presentation of President's Pin and Gavel—Mrs. A. B. Gravatt, Jr.

Presentation of Past President's Pin—Mrs. William F. Grigg, Jr.

Inaugural remarks—Mrs. James M. Moss, Alexandria

Convention acknowledgements—Mrs. Charles B. Bray, Jr.

Fashions by B. Forman Sons, Roanoke

Adjournment

Tuesday, October 8

8:00 A.M.—Past-Presidents' Breakfast, Virginia Room,
Hotel Roanoke

Mrs. William F. Grigg, Jr., Chariman

9:00 A.M.—Post Convention Board Meeting and Workshop, Pine Room. All new State Officers, Directors, Committee Chairmen, County Presidents and Presidents-Elect are expected to attend.

Mrs. James M. Moss, President, presiding

9:30 A.M.—Golf, Roanoke Country Club

2:00 to 5:00 P.M.—Bridge, Parlor

6:00 P.M.—Social Hour

7:30 P.M.—Annual Banquet of The Medical Society of Virginia, Ballroom, Hotel Roanoke.

9:00 P.M.—Dance, Ballroom, Hotel Roanoke.

Committee on Arrangements

General Chairman-----Mrs. Charles B. Bray, Jr.

Co-Chairman-----Mrs. P. A. Wallenborn

Registration and Credentials-----Mrs. E. J. Palmer
Mrs. Homer Bartley

Hospitality-----Mrs. R. S. Owens
Mrs. Houston Bell

Treasurer-----Mrs. C. L. Crockett, Jr.

Program and Printing-----Mrs. E. N. Weaver
Mrs. R. C. Hagan

Press and Publicity-----Mrs. C. A. Young, Jr.
Mrs. Hugh Trout

Luncheon-----Mrs. W. H. Kaufman
Mrs. C. D. Smith

Fashion Show-----Mrs. C. T. Burton
Mrs. H. R. Yates, Jr.

Decorations and Flowers-----Mrs. Julian Meyer
Mrs. L. J. Hamlett

VIP Hostess-----Mrs. W. H. Robison

Pages-----Mrs. P. C. Kistler

Invitations-----Mrs. D. W. Branch

Scrapbooks-----Mrs. R. F. Bondurant

Golf-----Mrs. P. C. Trout

Mailing-----Mrs. John Boyd, Jr.

Bridge-----Mrs. John Varner
Mrs. W. P. Tice

Medical Education—1963 Style

EVERY PHYSICIAN should read the symposium on Medical Education in the July 13 issue of the J.A.M.A. before this copy is discarded or filed away on the book shelf to gather dust. The greater portion of this issue is given over to papers read before the 59th Annual Congress on Medical Education in Chicago, last February. Those of us who are unable to follow the bewildering path that present-day medical education is taking will find a certain melancholy satisfaction in learning that some of the speakers also appeared to share this confusion.

Several speakers were alarmed over the ever-widening gulf that separates the full-time professors of the various specialties from the voluntary part-time teachers and those practitioners who have no teaching connection. The "professor with a research grant" was not described as an unmixed blessing. The indiscriminate acceptance of grants from sources unrelated to medical schools also came in for major criticism.

* * * * *

Dr. John L. Caughey, Jr., Associate Dean of Western Reserve University School of Medicine, in gathering data for an address on Obligations of Medical Schools to Students, received some surprising replies to a questionnaire dealing chiefly with externships, which many of the students at Western Reserve served in addition to their regular medical school activities. Most of the replies indicated that the students found the externships supplemented and added materially to their medical experience during their undergraduate days. A few were critical of the motives that prompted the program in some non-teaching hospitals. The following excerpts are typical of the replies that Dean Caughey received:

"The perspective gained was important. I feel that the clinical externship is one of the few places that a student, while in medical school, can develop a realistic perspective of medical practice. The realization that physicians outside of medical centers are not buffoons came as quite a shock to me. As a result, I listened to both my professors and the private practitioners more closely."

"I think externships should be part of medical school training. I have seen far more acute illness as an extern than at medical school."

"There is no justice in the world or they would have socialized medical education first. The academicians attack externships and in the same breath bitch about their salaries. The GP's appreciated us and tried to teach; the professors resented us and retreated to their mice."

"The extern's role at the hospital I served was entirely superfluous and was merely to provide a history and physical on the chart for protection of the hospital, so that some information would be on the chart before the patient went home from surgery, etc."

Dr. Caughey reviewed the history of the schism that separates academic medicine from the community practice of medicine and pointed out some of the more damaging by-products that result. He stated that the

students who plan to enter practice suffer most from this discord for "They find it difficult to understand their future obligations in the absence of appropriate models and they are hampered in their ability to formulate a clear image of themselves and their goals in an atmosphere in which research has more prestige than does the care of the patient and in which the community physician is frequently subjected to ridicule by scintillating house officers and attending physicians who, in lectures, talk about professional ethics and "teamwork".

This dean feels that a more favorable image of community practice should be publicized in medical schools with representative programs prepared and presented by understanding and outstanding members of the faculty.

* * * * *

The second article, entitled *The Care and Nurture of a Scholarly Faculty*, was, no doubt, a scholarly dissertation on this elusive subject but it was difficult to follow, for it was written in the idiom of the modern educator. This is a new and strange phenomenon in medical educational circles. The present-day educator's vernacular appears designed to obscure rather than reveal the thoughts of the author. Your writer finds the same difficulty in keeping in mind the subject of these long, tortuous, obscure sentences that he experienced when he attempted to translate scientific German into English. Fortunately the article was not a complete loss to your reviewer. The concluding sentence came through crystal clear—it was a quotation from Machiavelli.

* * * * *

Dr. Bland W. Cannon, Assistant Professor of Surgery at Memphis, Tennessee, in *A Critique on Medical Education*, compared the lot of the LMD or "Lost Medical Disciple" with that of his more sheltered colleague who fills a salaried position within an institution. Cannon stated that the full-time teacher has little conception of the problems inherent in independent practice and is prone to criticize the physician who does not have medical school affiliations. The laity is aware of this "squabble" within the profession and it does not enhance the image of the doctor. This, he felt, may explain, in part, the decrease in applications for admission to American medical schools.

"Where," Cannon asked, "In our system of education is the student expected to develop the proper attitude toward the patient, and towards his colleagues in the profession, and when is he disciplined as a scholar in whom there is dedication to continuing self-education, embracing those attitudes of curiosity, perseverance, initiative and originality?" He further stated "In our medical schools today, in order to obtain prestige and to elevate their status, most teachers must rely on their research activities. For a better standing in their profession and for national recognition, they must produce publications. Thus, a gradual misdirection of the teacher's interest, away from teaching, occurs, which makes the present marriage of teacher and researcher not so compatible. If that researcher and teacher considers his teaching a mere chore, only to be tolerated for his position, better for all would be his transposition into an institution of scientific research in which his efforts would not be deterred by the needs

of the student. This individual should be the recipient of similar criticism frequently leveled at the voluntary clinical teacher, and justly so, for letting the demands of his patients interfere with his teaching at the university. More and more, the full-time clinical teacher has been hatched and developed within the confines of the university, without the maturing or enlightening experience of private practice. He may excel in the application of scientific facts and strive to exact the applied science of medicine, but, while he is doing so, the deficit in developing the art of medical practice is magnified."

* * * * *

Augustus J. Carroll, Business Officer, State University of New York, in *Sources of Support of Medical Schools*, warns against accepting support from sources which may carry obligations that obstruct, rather than facilitate the attainment of the medical school's objectives. Funds obtained from tuition, student fees, unrestricted grants, university or state sources, according to Carroll, imposed obligations that in general conform with the basic goals of the medical school. On the other hand, during 1960-61, 51% of the total expenditures of our medical schools was derived from programs initiated by outside organizations. These were designated chiefly for research and training, and had strings attached in many cases which resulted in greater benefits to the sponsors than to the basic needs of the involved school. In some instances the monetary cost to the medical school exceeded the payment ultimately received by the institution.

Carroll found that at times the programs interfered with other essential activities and the faculty members were diverted from their teaching duties. These secondary or sponsored research projects give outside groups or agencies a voice in medical school affairs, which does not carry with it a corresponding interest or responsibility in the over-all welfare of the school. This is an unhealthy situation in which the institution stands to lose. Carroll pointed out the undue influence that individual faculty members with major research grants may wield, with detriment to the entire medical program. A serious unbalance between teaching, research, and research training programs may result, with corresponding danger to the basic goals of the institution.

* * * * *

Dr. Leland McKittrick, Professor of Surgery at Harvard Medical School, and Chairman, Council on Medical Education and Hospitals, of the American Medical Association, has been closely associated with medical education since his graduation from Harvard 45 years ago. He gave figures indicating the enormous increase in costs of all phases of medical education during the past 20 years. While the number of medical schools increased from 77 to 87, their total expenditures rose from \$32 million to \$433 million, the average increase in annual expenditure per student went from \$1,400 to \$15,000, and research and training grants soared from \$4 million to \$221 million.

Dr. McKittrick probed a sore spot when he stated "It is shameful that in so many of our schools today there exists, at times, an antagonism between the full-time educators and the practicing physicians of such severity as to seriously jeopardize the effectiveness of the school and its

program. It is present to a serious degree in a few schools and to more than a reasonable degree in others; it is a potential problem to all." He stated, "A really good educational program in the clinical field is dependent upon a nucleus of full-time clinicians and larger groups of dedicated practicing physicians able to teach and willing to steal from an active practice the time necessary to do a good job." If a positive effort to understand each other is made, "town and gown" will no longer be a problem.

The explosive expansion of medical knowledge and methods during the past two decades has widened the gap between teaching centers and outlying provinces. Only by the use of better, and as yet undeveloped, methods designed to bring research and clinical centers in closer relationship to the practicing physicians will this be overcome. McKittrick bordered on heresy, by present-day medical school standards, when he stated, "I might even go so far as to suggest that possibly more will be done to bring to the public benefits of modern medicine if, temporarily, less emphasis is placed on basic research and more on making available to the people that which recent research has discovered."

It is in the university-affiliated hospitals, McKittrick stated, the student should learn to understand the effects of illness on the individual and his family, and he should realize the importance of the patient's family physician to the sick man, to his family and hospital—"that he is not to be brushed off as the 'LMD' but recognized as an experienced physician, frequently working under limitations unknown to those in the hospital and indispensable to the total medical welfare of the patient and family." While emphasis should be on the patient, thoughtful teaching, with carefully planned research is essential. "If, however, there is to be overemphasis on any one of these it must be on care of patients, not on research, not even on teaching." In closing he stated, "Problems of town and gown are a blight on our educational possibilities and a disgrace to our profession and demand a more determined effort by educators and practicing physicians to understand and to trust each other so that no educational program shall suffer."

After reading the above criticisms of our medical educational system by acknowledged leaders in this field it can only be hoped that existing deficiencies were emphasized and those other areas, in which our medical schools are doing surpassingly well, were omitted. The physicians of Virginia are again urged to read this symposium in its entirety in order that the over-all picture may be obtained of contemporary medical education as seen through the eyes of this distinguished group of panelists.

HARRY J. WARTHEN, M.D.

New Members.

The following new members have been received into The Medical Society of Virginia since the list published in the August issue:

Hampton R. Bates, Jr., M.D., Richmond
Robert Gray Busboom, M.D., Waynesboro

Ernesto Milla Cube, M.D., Radford
Ronald Kenneth Elswick, M.D., Radford
John Hughes, M.D., Hampton
Bharat Bsushan Kumar, M.D., Galax
William Bruce Lundeen, M.D., Richmond

Henry Hatchdent Sterrett, M.D., Arlington

Vamik Djemal Volkan, M.D., Charlottesville

Dr. J. J. Waff,

Shenandoah, has received the first Man of the Year Award given by the Grove Hill-Newport Ruritan Club. The award was made during a "This is Your Life" program by the club. Dr. Waff first came to Shenandoah as a doctor with the Norfolk and Western Railroad some forty years ago.

Dr. Samuel M. McDaniel,

Norfolk, has been named president-elect of the Virginia Heart Association. He was president of the board of directors of the Tidewater Heart Association for several years and has served continuously as chairman of its Medical Advisory Committee since 1958.

Dr. Ira L. Hancock,

Creeds, has been reappointed by Governor Harrison for a four-year term on the State Hospital Board.

Virginia Industrial Medical Association

An association of physicians engaged in

the practice of medicine in industry has been organized in Virginia. There are twenty-eight members and the first annual meeting will be held on October 7th in Roanoke. One of the prime emphases of the association will be on the promotion of preventive medicine, on the prevention of accidents and injuries, as opposed to the treating of injuries after they have already happened.

Dr. Mallory S. Andrews, Norfolk, is president; Dr. C. L. Savage, Waynesboro, vice-president; and Dr. James M. MacMillan, Richmond, secretary.

Dr. Newman Honored.

Dr. Samuel Newman, Danville, was honored for forty years of service to the Public Health Child Care Clinic at its 40th Anniversary on July 3rd. He has had only seven absences during this time and these were all due to illness. A conservative estimate of the number of patients visiting the Clinic in the forty years would be between twenty-three and twenty-five thousand.

Harvest Festival.

The Annual Harvest Festival in Roanoke will be held just prior to the annual meeting of The Medical Society of Virginia, October 2-5. The program will include the Old Dominion's only State-wide Industrial Exposition, home and garden displays, fashion shows and a family night entertainment. About 250 exhibits will be in the Industrial Exposition and in the "Color and Fashion for Living". The Industrial Exposition will be a mammoth display of some 150 exhibits worth millions of dollars.

Saturday, October 5th, will be the biggest and most exciting day and all exhibits will open at 9:30 a.m. There will be a parade and in the afternoon, Virginia Tech and the University of Virginia will meet in the annual Harvest Bowl. Industrial Exposition exhibits will reopen after the game until 7 p.m., and the climaxing event will

be a family night entertainment with country music and talent beginning at 7:30 p.m. at the stadium.

Kidney Symposium.

The Virginia Chapter of the National Kidney Disease Foundation will sponsor a symposium on October 18th in the Baruch Auditorium of the Medical College of Virginia, Richmond. Topics to be discussed are: Diagnosis of Unilateral Renal Disease in Hypertensives; Unilateral Renal Disease; Mannitol in the Differential Diagnosis of Oliguria; Importance of Potassium in Fluid Therapy; Peritoneal Dialysis; The Problem of Chronic Uremia; Acute Pyelonephritis; Management of Bladder Neck Obstruction in Children; Chronic Pyelonephritis; Acute Glomerulonephritis; and Renal Biopsy. This one-day program will feature outstanding participants from the North Carolina, Virginia and District of Columbia area.

Program and registration details will be mailed later.

Anesthesiologist,

Board certified, desires to relocate because of unfavorable local conditions. Virginia license. Reply to #65, care the Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia 23221. (*Adv.*)

Doctor's Suite Available.

In Medical Building at very busy, large apartment community of 10,000—with immediate surrounding area of 20,000 more. Three rooms and bath. This is a wonderful opportunity. Contact L. F. Kettell, 313

North Glebe Road, Arlington 3, Virginia. Phone Jackson 2-5004. (*Adv.*)

Now Leasing

At McLean, Virginia. Few suites still available in new multi-story elevator building in fast growing suburb of Washington, D. C. Ready for occupancy. P. O. Box 502, McLean, Virginia, or telephone KENmore 8-5010. (*Adv.*)

Office Space Available.

For rent or sell in new Annadale Doctors' Building, Annandale, Virginia, northern Virginia's fastest growing area. Certain specialists as neurologist, neuro-surgeon, psychiatrist, dermatologist, radiologist, ear, nose and throat, pediatrician, or allergist are especially desired. For information, call Annandale CL 6-0900. (*Adv.*)

Public Health Careers.

The Virginia State Department of Health invites applications from physicians interested in public health as a career. Appointments available as directors of local health departments with inservice training and state-financed postgraduate study leading to Master of Public Health Degree. Salary range \$12,000 to \$15,675; entrance salary dependent upon qualifications. Applicants must be American citizens, under 48, and eligible for Virginia licensure; liberal sick leave, vacation, group life insurance, malpractice insurance and retirement benefits. Write: Director, Local Health Services, Virginia State Department of Health, Richmond 19, Virginia. (*Adv.*)

Obituaries

Dr. Adlai Ewing Stephenson Lilly,

Richmond, died July 27th, at the age of seventy. He was a graduate of the Medical College of Virginia in 1917 and had practiced in Richmond since that time. Dr. Lilly was a Mason and had been a member of The Medical Society of Virginia since 1919.

His wife and three sons survive him.

Dr. Thomas Hening Anderson,

Lawrenceville, died July 17th. He was sixty years of age and a graduate of the Medical College of Virginia in 1928. Dr. Anderson was medical examiner of Brunswick County and a member of the County Electoral Board. He was a surgeon for the Atlantic and Danville Railroad. Dr. Anderson had been a member of The Medical Society of Virginia for thirty-three years.

His wife and a daughter survive him.

Dr. Julian Belmont Woodson,

Lowesville, died July 7th, at the age of ninety-two. He received his medical degree from Washington University in St. Louis, Missouri, in 1899. Dr. Woodson practiced in Amherst County for several years and then served as medical examiner for the Bureau of Pensions in Washington for six years. He was superintendent of Piedmont Sanatorium at Burkeville from 1931 to 1946. Dr. Woodson represented Nelson and Amherst Counties in the Senate of Virginia from 1920 to 1938. He had been a member of The Medical Society of Virginia for thirty-two years.

Two sons survive him.

Dr. Henry Hamilton Hammer,

Chatham, died July 19th, after a short illness. He was sixty years of age and received his medical degree from the University of Virginia in 1933. Dr. Hammer

served as medical examiner of Pittsylvania County for more than twenty years. He was a Mason, a charter member of the Chatham Rotary Club, and a member of the American Association of School Physicians. He had been a member of The Medical Society of Virginia since 1936.

His wife, a son and a daughter survive him.

Dr. Edward Butts Kilby,

Newport News, died July 18th at the age of seventy-six. He was a graduate of the Medical College of Virginia in 1915. Dr. Kilby practiced in Toano and Williamsburg from 1923 to 1958. For the last few years he had been in Texas. He had been a member of The Medical Society of Virginia for twenty-six years.

A son and a daughter survive him.

Dr. Charles Lewis Baird,

Farmville, died July 15th. He was sixty-five years of age and a graduate of the Medical College of Virginia in 1929. Dr. Baird was radiologist at the Southside Community Hospital and was a former member of the Prince Edward County School Board. He served in World War II and was awarded the Legion of Merit and the Bronze Star in the Battle of the Bulge. Dr. Baird was a member of The Medical Society of Virginia, having joined in 1952.

His wife and a son survive him.

Dr. Byrd.

WHEREAS, in the passing on the 29th of April, 1963, of Dr. George Bentley Byrd, we, the members of the Norfolk County Medical Society, recognizing our great loss and that of the community wish to pay tribute to his memory.

Dr. George Bentley Byrd was born on October 7, 1891, in Keller, a son of Abel James Byrd and Emma Cora Mears. He attended William and Mary College. Dr. Byrd received his degree in medicine from the

Medical College of Virginia in 1914, and his internship was served at Sarah Leigh Hospital in Norfolk. He was a pioneer specialist in Obstetrics and Gynecology in this area where he practiced for nearly fifty years.

He is survived by his wife, who was Miss Katherine Bell from San Antonio, Texas, a daughter, a son and several grandchildren.

Dr. "Bentley" served his Country during World Wars I and II. He served as Medical Officer of the Fifth Naval District, and was Special Representative of the Commandant in charge of the Reserve Medical Program.

Dr. Byrd was a member of the Eastern Shore Chapel. He was a member of the Norfolk County Medical Society, The Medical Society of Virginia, a Fellow of the American College of Surgeons, and one of the first members of the South Atlantic Association of Obstetricians and Gynecologists.

His devotion to his family, his profession, his patients and his friends will be remembered by all who enjoyed his acquaintance. His ability to show patience, tolerance and understanding to all in all his dealings will never be forgotten. He will be remem-

bered for his untiring efforts to promote good, sound obstetrical and surgical principles by his lectures to the interns and nurses, by his work with the King's Daughters Clinic and the Florence Crittenton Home, and his teaching of the medical students from the University of Virginia. His gentle smile, his persuasive manner and his delightfully illustrative stories will be missed.

WHEREAS, we his fellow members of the Norfolk County Medical Society on this 4th day of June, 1963, unite with his many grateful patients and associates to share with his family their bereavement.

NOW, THEREFORE, BE IT RESOLVED that we convey to his family our sincere sympathy and deep respect for his memory.

BE IT FURTHER RESOLVED that a copy of this resolution be spread upon the minutes of the Norfolk County Medical Society, a copy published in the Virginia Medical Monthly, and a copy sent to his family.

Respectfully submitted,

WALTER P. ADAMS, M.D.

JAMES M. WOLCOTT, JR., M.D.

SOUTHGATE LEIGH, JR., M.D., *Chairman.*

Guest Editorial

Yes, There Is a West, Virginia

SOME YEARS BACK, when I was a lad, I had one of those memorable days that I have always considered to hold a moment of truth. A definitive moment, it was; a moment of enlightenment. Before it, I was confused and ignorant; afterward, all doubt was banished and I have been quite positive about the matter ever since.

It was during the fall of my final year in medical school in Boston which, you may recall, is in Massachusetts. Those were the days when we were mightily concerned with internships and good ones were hard to come by. They paid no money and there was a lot of scut work, but we had to have one then, even as now.

By our fourth year in Boston we had been pretty well conditioned to accept the fact that we were truly in Mecca. We tended to think that leaving Boston would be a step down, an admission that we hadn't quite made the grade. And so there we were in our fourth year, in Boston, waiting to take "the Boston exams".

There was reason for tension. Quite a few more fellows were waiting to take the exams than there were internships available. And "the Boston exams" were the last ones given in the country. If you missed in Boston you had eliminated yourself from all other good spots as well. So there was cause for alarm.

The Dean in charge of internships was aware of this. One day during lunch the matter came up.

"I think you fellows ought to look around for internships outside of Boston," he said. "You know there are about 25 more of you planning to take the exams than there are jobs. Somebody is going to be left out. You ought to look around while there's still time."

"Where would you suggest we look, sir?" someone asked. "All the jobs in New York were taken just last week."

New York wasn't the best but it was acceptable if you couldn't stay in heaven.

"I should think you'd look out West," said the Dean. "There are some good internships in the West." He puffed slowly on his pipe before he

continued. "You don't have to stay in Boston, you know. There's a lot of opportunity out West and you ought to consider it."

"Where do you mean?" we asked. "Where could we go in the West?"

"Well," he said thoughtfully, "They have some fine hospitals out in Worcester and I'm sure they could use some internes in Springfield."

So if anybody asks you where the West begins, you tell them. It is somewhere between Boston and Worcester. Somewhere between 71-03-25 and 71-48-17 West longitude. That's a fact. The Dean said so. And for the purposes of staking the claim I will split the difference and say the West starts in Framingham, Massachusetts.

That puts Virginia solidly on Western soil and in the event you weren't aware of it before, Welcome podners. Welcome, y'all to the wide open spaces.

We're mighty proud to include such centers of culture as Richmond and Norfolk and Roanoke with Portland and San Francisco and Seattle. We are happy to recognize as western spreads those plantations where the cotton and the corn and 'taters grow. They're as much a part of the West as the rolling hills of the Palouse where the wheat runs gold as far as the eye can see. And we're mighty pleased to have kissin' cousins all the way from Virginia Beach to LaPush.

It may take you a little while to get used to the idea that you are part of the West. After all, you hear about some mighty strange goings on down in L.A. and it may take some time to adjust to the idea that you are a part of all that.

You do adjust, though. I know it. After all, I have learned to accept West Virginia.

I once knew a high-ranking army officer who could get higher and ranker than anybody. When he was in his cups, which was frequently, he used to sing a song about some unsavories from the West Virginia hills. At first I thought them rather shocking but now I catch myself humming snatches of the tune occasionally and the characters I considered pretty morbid I now regard as "quaint". In time you could develop the same feelings about Los Angeles.

So again, welcome to the West, Virginia! Richmond, may we present Seattle? Roanoke, say "hello" to Spokane. Lynchburg, shake hands with Yakima. All you cotton pickin' tobacco planters, stand up and say "howdy" to your apple knockin' cherry pickin' cousins on the ladder, there.

Y'all belly up to the bar and name yer pizen, hear? Yes, there is a West, Virginia. You are in it. The West ain't Boston, but it ain't bad!

ERIC R. SANDERSON, M.D.

*1115 Columbia Street
Seattle, Washington*

Present Status of Endocrine Therapy in Obstetrics and Gynecology

EUGENE S. GROSECLOSE, M.D.
Lynchburg, Virginia

A useful list of hormones is reviewed, indications for administration are discussed as well as the limitations of these preparations.

GREAT ADVANCES have been made in our knowledge of the endocrinology of the female reproductive system in the past three decades. This knowledge has been applied to many problems in obstetrical and gynecological practice. As endocrinologic physiology and physio-pathology become better understood, and as new hormonal preparations are developed, revised approaches to hormonal therapy become necessary. Certain definitely established indications for the clinical use of the female sex hormones are now recognized. One must, however, frequently review the present concepts concerning endocrine treatment in order to avoid an improper approach to disorders that might otherwise be helped by endocrine treatment. In many conditions hormone therapy has been disappointing, mainly due to the failure of proper evaluation of the patient, as well as the improper use of the available hormones for treatment. Furthermore, hormones are frequently used in conditions in which they have been shown by investigation to have no value.

Another very important consideration in female endocrine therapy is that the physician must remember that the reproductive organs constitute only a part of the endocrine system. Disturbances in other endocrine glands may in turn exert strong influences over the function of the repro-

ductive system. Similarly, dysfunction in the reproductive hormonal system may adversely affect other glands and the general health of the patient. Any program of study or treatment must therefore be directed towards the entire individual and not confined to any one system.

For successful hormonal therapy, an accurate history and physical examination are an integral part of this study, in order to rule out the presence of any organic disease or malformation. This is particularly true in certain types of genital bleeding, in which premature hormonal therapy, without adequate investigation such as endometrial biopsy by curettage, may confuse or mask the true diagnosis and possibly delay the diagnosis of a malignant lesion. It must be emphasized that a careful total evaluation of the patient as a whole is a prerequisite to safe, successful and adequate hormonal therapy.

The purpose of this paper will be to review the presently accepted methods of hormonal therapy in various obstetrical and gynecological problems. The most important hormonal preparations now available, with the most frequently used dosages, will be briefly reviewed. In addition, the commonly accepted disorders in which hormonal treatment is felt to be of value will be presented. No attempt will be made to discuss the very broad and comprehensive field of this subject, including the source, physiology and actions of all the hormones, both natural and synthetic. Many physicians, including the author, become confused by the great number of endocrine preparations now available. It is both difficult and impractical to learn all the effects, indications, dosages, administration, adverse reactions and con-

traindications of so many preparations. It is generally agreed that the selection of a few of the well accepted hormonal preparations, with limitation of their use to those conditions that have been shown to respond to treatment, is the wise approach to successful results.

Hormone Preparations Commonly Employed

A. ESTROGENS.

Estrogens may be either natural or synthetic. The natural estrogens are steroid compounds that are produced by the ovarian follicles and the corpus luteum. They are also secreted by the placenta in quantity and in limited amounts by the adrenal glands. The three natural estrogens found in the human body are estradiol, estrone and estriol. Estradiol, the most active physiologically, is considered as the primary ovarian hormone, whereas estrone is regarded as a degradation product of estradiol. Estriol, which is the least active physiologically, is excreted in large amounts during pregnancy.

Several commercial preparations, composed principally of one of these hormones, are available for clinical use. Estradiol valerate (Delestrogen®) is an ester of estradiol which exerts a prolonged effect following intramuscular injection. This preparation is therefore useful in certain conditions requiring prolonged estrogenic stimulation.

Conjugated estrogenic substances are partially purified mixtures of several estrogens which are derived from natural animal sources and then biologically standardized. These compounds are effective, well tolerated and may be administered orally or parenterally.

Diethylstilbestrol is probably the most commonly used effective synthetic estrogen in hormonal therapy today. This compound has the advantage of being inexpensive and it also possesses strong estrogenic activity. However, one disadvantage in its use is the production of nausea and vomiting in many patients, especially after large doses that are

at times required. Methallenestril (Valles-tril®), an orally active estrogen, is usually better tolerated than diethylstilbestrol and is clinically effective. There are many other estrogenic preparations for use both orally and parenterally, including Progynon®, Theelin®, Ovocycin® and others. A discussion of the dosages or comparative values of such a large group of preparations is impractical for this presentation.

As a rule, estrogens are more easily administered orally, are more economical in terms of time and cost, and are just as effective as those administered parenterally.

B. PROGESTOGENS.

Progesterone is a natural steroid that is produced in the ovary by the corpus luteum and therefore exerts its effect on the body during the post-ovulation phase of the menstrual cycle. This hormone is also produced in large amounts by the placenta and is largely responsible for the normal preparation, reception, and maintenance of a normal uterine pregnancy. Small amounts of this hormone are produced by the adrenal glands. Since progesterone is inactivated by the liver, this hormone is clinically more effective when given parenterally than when given orally.

A number of new synthetic compounds are now available which are capable of producing a pronounced progestational effect. These compounds, which are chemically 19-nor steroids, are of especial interest due to their high oral potency and because of their possible androgenicity. The marked chemical similarity between progesterone and the male hormone testosterone, led to the discovery that certain derivatives of testosterone, as well as those of progesterone, may produce progestational effects.

Ethisterone or anhydroxyprogesterone (Lutocylol®, Pranone® or Nugesterol®) is one of the older synthetic steroids that is effective orally, but a dose several times that required by parenteral administration is required to produce the same progestational effect.

Norethindrone (Norlutin®) and Norethindrone acetate (Norlutate®) are relatively new but potent orally effective synthetic compounds which produce gestational changes. Norethynodrel is another similar compound and when combined with ethynylestradiol 3-methyl ether, is known as Enovid®. Much has been written recently concerning long term ovulation control or inhibition with this drug. Used as an oral contraceptive, this drug has had widespread use and acceptance, and this clinical use will be discussed more fully later on. It may be mentioned here that it has two minor disadvantages, namely a rather high rate of mild nausea, and the production of a pseudo-decidual endometrial change after prolonged use, which may be confused histopathologically with pregnancy or even malignant changes.

Hydroxyprogesterone caproate (Delalutin®) is a derivative of naturally occurring progesterones which has the advantage of prolonged gestational changes, lasting 2-3 weeks following a single injection. This compound has been used extensively in cases requiring prolonged gestational effect, namely threatened abortion, habitual abortion, or threatened premature labor.

Another recent progestin of proven value in these conditions is 6 methyl 17-acetoxypregesterone acetate, or Provera®. This compound is available both in the oral and injectable forms. Following the use of this drug, fetal salvage has been greatly improved, and it is significant that following its use, there have been no cases of androgenic effect. Provera appears at the present time to be the most promising compound in stimulating the endometrium, in delaying parturition and in maintained pregnancy.

When long term treatment is necessary, the advantages of these newer oral progesterones becomes obvious, due to their ease of oral administration. But it should be borne in mind that there is now evidence that most of these compounds can exert an androgenic effect greater than natural pro-

gesterone, and any masculinizing effect must constantly be watched for.

C. GONADOTROPINS.

There are two types of gonadotropins that are produced in the human female, one produced by the pituitary gland, which is known as "pituitary gonadotropin". The other is produced by the placenta and is called the "chorionic gonadotropin". Much study has been applied to the clinical use of the gonadotropic hormones in many obstetrical and gynecological conditions. However little success has resulted from their use and the tendency in humans to rapidly develop anti-hormones, further complicates their use. For these reasons they have largely been discontinued in practice.

D. OXYTOCIN.

This hormone is derived from the posterior lobe of the pituitary gland and is of great importance and therapeutic value in obstetrical practice. Since the chemical structure of oxytocin has been determined, this hormone is produced synthetically in two forms; the partially purified active natural oxytocin principle (Pitocin®) and the syntheticoxytocin (Syntocinon®). The reactions and results of these two drugs are identical and the limitations and relative dosages for their use are well known.

One of the most common uses for this hormone is the induction and stimulation of labor by means of very small doses of the drug being administered by an intravenous infusion at a very slow and controlled rate. Depending upon the degree of uterine stimulation produced or desired and other obstetrical factors involved, this drug is given very slowly and carefully. As a rule, about 10 minims are mixed in a 1000 cc. infusion of glucose or saline and the mixture then given at a rate of about 30-40 drops per minute. Constant attendance of these patients receiving intravenous Pitocin is absolutely necessary for its safe use. There must be no obstetrical or physical contraindi-

cations present, nor should it be used in any case of abnormal fetal presentation. Its use in the grand multipara is risky and should be limited. When properly administered in carefully selected cases, with constant attendance of trained personnel, this method of induction and stimulation of labor has been one of the major obstetrical advances within the past decade and is now widely used in many recognized maternity hospitals.

Pitocin is also routinely used following delivery to produce strong uterine contractions and to control postpartum bleeding.

OTHER PREPARATIONS.

There are other hormonal agents which are of value in the practice of obstetrics and gynecology, but they are not considered primarily as therapeutic agents for the female reproductive tract. They are frequently used in conjunction with other hormonal treatment, and these agents would include the androgenic compounds, the adrenocortical agents and the hormones of thyroidal origin. However as stated above, the limited scope of this paper prevents a full discussion of all the therapeutic agents in use today.

The most frequent clinical application of the female hormones will now be briefly outlined.

Endocrine Therapy In Obstetrics

A. INFERTILITY.

One of the most perplexing and disappointing problems faced by the obstetrician-gynecologist today, is that of the infertile or sterile woman. For many years it has been postulated that there is no effective endocrine therapy for sterility in the presence of regular anovulatory menstruation. Many approaches to this problem through female endocrine therapy have been tried and most have been disappointing. In patients who ovulate irregularly or fail to ovulate, cyclic hormone therapy with estrogens and progesterone, in an attempt to duplicate the processes occurring in naturally

ovulating women, has been tried extensively with only partial success. There is no known hormone regimen that will constantly produce ovulation in a nonovulating woman.

In addition to the cyclic estrogen-progesterone therapy, probably the most helpful hormone in the treatment of the infertile patient is that of the thyroid gland. Many of these patients have irregular and scanty menses and with proper evaluation by the protein bound iodine test (PBI), thyroid therapy is considered as a useful adjunct in treatment. When infertility occurs in patients with a normal or slightly subnormal test for thyroid function it is the practice of most gynecologists to administer thyroid preparations, preferably of the newer refined type, such as Proloid.[®] Internists often dispute the validity of the use of thyroid in patients whose metabolic rate is -10 to -15% , but experience has shown that often the use of thyroid therapy in these patients, who cannot be proved to have a hypometabolic rate, results in regulation of the menses, an improved endometrial pattern and increased fertility.

B. THREATENED AND HABITUAL ABORTION.

For many years the relative value of the use of hormones for threatened and habitual abortion has been one of the most controversial subjects in obstetrical practice. The therapeutic approach to this problem has run the gamut from ultraconservatism with multiple types of therapy, long bed confinement and complete physical restriction, to the practice of no physical restriction or therapy of any type. Today there is still no unanimity of opinion as to the value of any type of hormonal therapy, or to the associated treatments, such as physical rest, vitamin therapy, sedatives or psychotherapy. The extreme difficulty in obtaining controlled studies of this problem seems to exaggerate the proof or doubt of these procedures.

The management of the patient who begins to bleed in early pregnancy is difficult

to evaluate. Many of these patients do not abort regardless of their physical activities, treatment received or complete lack of treatment. Many articles in obstetric literature in recent years by well known authorities indicate that endocrine administration for threatened abortion has failed to improve the salvage of these fetuses and would therefore be considered as of no value. They even further advocate that no form of medical treatment be given and that no physical restriction be required. The author does not agree with this theory of treatment for these patients and is convinced that a combination of physical rest and restriction, along with the administration of corpus luteum hormone, sedation and vitamin E therapy will in some cases result in the continuation of the pregnancy to a successful conclusion. One very important consideration in the approach to this problem, which is a very vital one to the patient, is the psychotherapeutic stimulation that the patient derives from an active and sympathetic attempt on the part of the physician to help her maintain the pregnancy and to attain motherhood.

For the patient who habitually aborts in the early weeks of pregnancy, the management is very difficult and most often disappointing. Actually the treatment and investigation of this type of patient should begin *before pregnancy occurs*. This study would include an evaluation of her general health, the determination of the presence or absence of any anatomical or pathological abnormality of the genital tract. Additional studies would include a microscopic study of the endometrium, a study of the thyroid function, and the elimination of any blood dyscrasias or any emotional or psychiatric problem. Should these studies prove normal, the hormone therapy should be begun as soon as gestation is diagnosed.

The hormone of choice is progesterone or one of the newer progestational agents. Intramuscular administration of Delalutin® in doses of 250 mgm. two or three times daily for one week and then gradually re-

duced to several times weekly, is advocated. Other physicians prefer Norlutin® or Enovid® in daily doses of 10-20 mgm. for at least the first 12-16 weeks of the pregnancy, with gradually decreasing doses if pregnancy continues and placental function takes over. In addition to the above, restricted physical activity, cessation of marital relations and the supplemental administration of Vitamin E are advocated. Some controversy exists over the possible androgenic effect of some of the above progestational agents on the fetus and the resulting possible congenital anomalies of the external genitalia of the female infants. The use of these compounds may be associated with a partial or complete labial fusion and significant clitoral enlargement. However these anomalies are very rare, even in patients who have received large doses of these agents over a prolonged period of time, or even in some cases throughout the entire pregnancy. Furthermore, similar genital deformities have been reported in patients receiving large doses of stilbestrol, and, indeed, in some cases of mothers who have received no steroid therapy during pregnancy.

It would be wise to emphasize that if the physician feels that the use of the steroids described above, despite the everpresent potential effect of masculinization of the external genitals of the female fetus, will permit a viable birth to take place, their use then is not contraindicated.

C. PREGNANCY AND DIABETES.

Many articles have appeared in the recent medical literature advocating hormonal therapy in patients with diabetes complicated by pregnancy. According to these workers, a sharp rise in the chorionic gonadotropin after the twentieth week of pregnancy would predict a possible premature delivery, stillbirth or neonatal death. For these reasons, they advocate continuous substitutional estrogen and progesterone in replacement doses. Others have recommended enormous doses daily of stilbestrol

throughout pregnancy. This method has failed to win any general acceptance and most obstetricians consider that treatment with sex hormone is not indicated for the pregnant diabetic patient. Most of them do agree that the most important factors in the safe conduct of pregnancy and labor in the diabetic patient would be the careful control of the diabetes during pregnancy and labor, preferably with the assistance of a properly trained internist. Good obstetrical judgment as to the management of labor and delivery, whether by the vaginal or abdominal route, is of paramount importance. Finally, the care of the newborn of a diabetic mother should immediately be turned over to a pediatrician at birth. This type of cooperative management has greatly reduced the previous hazards of childbirth in a patient with diabetes.

D. SUPPRESSION OF LACTATION.

Many methods of hormonal suppression of lactation have been devised and most are successful. In general, the use of estrogens or androgens, either alone or in combination, has proven very satisfactory. Therapy is begun immediately after birth and may be given either orally or parenterally. Stilbestrol in doses of 5 mgm. three times daily for five days is one of the most widely used routines. The frequently encountered nausea and excessive withdrawal bleeding are unpleasant. Other combined preparations of estrogen and androgens are available and can be successfully used by the oral route with very few side effects. One of the most effective methods now in use is the intramuscular injection of a combination of testosterone enanthate and estradiol valerate. This compound, known as Delaudumone 2X,[®] is given intramuscularly in a single 2 cc. dose immediately after delivery. The effective action of this preparation continues for some days and the undesirable side effects of nausea and bleeding have been almost completely absent. In most cases, no additional treatment is necessary.

E. CONTRACEPTION BY ORAL HORMONES.

One of the newer and more widespread applications of female hormones is that of long term ovulation control by oral hormones for the purpose of contraception. This method, now in general use, has proven very successful, safe, and without any impairment in the normal female physiology. Unusually thorough studies conducted continuously for more than four years, and covering 3,500 women, over 3,800 woman years or 49,500 menstrual cycles, have demonstrated that the drug in use, namely Enovid,[®] is both safe and effective.

The physiologic mechanism of pregnancy inhibits ovulation for the duration of the pregnancy and it is accepted that the production of ovarian hormones by the corpus luteum is primarily responsible for this phenomenon. Enovid inhibits the production of the gonadotropic hormones in the same manner as they are inhibited during pregnancy. By this selective action, normal ovulation fails to occur after the drug is stopped. The safety of this drug when given cyclically for prolonged periods has been subjected to thorough study. No adverse effects have been shown, the ovum producing capacity of the ovaries has not been reduced, and normal women ovulate and menstruate regularly and normally after the use of this drug. There has been no adverse effect shown on the gonadotropic activity of the anterior pituitary or to the production of other anterior pituitary hormones. There has been no impairment in fertility and, in fact, fertility appears to be enhanced.

The usual procedure in this method of ovulation control is the daily administration of one 5 mgm. tablet of Enovid, starting on day five of the menstrual cycle and continuing through day 24. Several days later, usually the third or fourth day after the drug is discontinued, the menses appear and the medication is again started as above. The most frequently encountered side effect is mild nausea. Should breakthrough bleeding occur, the administration of one addi-

tional tablet that day will control this symptom.

Gutmacher states that "Enovid is the best, the most effective contraceptive known to man. Its failure rate in patients who take it consistently is virtually zero."

Endocrine Therapy In Gynecology

A. VAGINITIS IN YOUNG GIRLS.

Prepubertal nonspecific vaginitis and the so-called atrophic vaginitis that occurs in young girls before the onset of menstruation respond very favorably to estrogen therapy. As a rule local treatment only is required and consists of the application each night of an estrogen cream or vaginal suppository containing estrogen. Response is usually satisfactory within a week, but the application should be continued for about two weeks.

B. DYSFUNCTIONAL UTERINE BLEEDING.

One of the most common problems confronting the gynecologist is the condition of excessive uterine bleeding. The term "dysfunctional uterine bleeding" has been variously defined by different authorities and is also known as "functional uterine bleeding". In general, this term implies excessive uterine bleeding which may occur at any age of the reproductive period, which *is not* related to any gross organic disease of the pelvic organs. Thus the diagnosis is usually confirmed when careful study has excluded organic causes for uterine bleeding. Most often it occurs near the menarche or prior to or in the early menopausal period, but such bleeding may occur at any age period.

To establish the diagnosis, a curettage is indicated in almost all cases of dysfunctional bleeding. In young girls under the age of 20 years, who respond well to medical treatment, this procedure may be omitted unless the bleeding is too severe. But in the older women, especially those in the menopausal age group or post-menopausal patients, a diagnostic curettage is always indicated to rule out uterine malignancy. Careful study

of the endometrial tissue by a competent pathologist should be carried out in all cases. This would determine the phase of the menstrual cycle in which the bleeding occurs or depict the presence of malignant changes. Dysfunctional uterine bleeding is not associated with failure of ovulation in all cases and the endometrium may present either the proliferative or the secretory phase.

As to treatment, the main concern in the young girls with dysfunctional uterine bleeding is the control of the severe blood loss, rather than the menstrual irregularity. Treatment should therefore be directed to controlling the bleeding as quickly as possible and the administration of one of the conjugated estrogens, such as Premarin,[®] may be rapidly effective. Usually a dose of 20 mgm. is given intravenously and often the bleeding will improve within a few hours. Repeated doses may be required every 4-6 hours in some cases. Following this initial control of the bleeding, daily oral doses of a conjugated estrogen in gradually decreasing amounts should be given for a period of about 25 days to maintain hemostasis. Following this 50-100 mgm. of progesterone is given intramuscularly or one of the progestogens, such as Norlutin or Enovid, may be given in daily doses of 10 mgm. for one week. Following this regimen, withdrawal bleeding will usually occur within 5-7 days. Cyclic estrogen-progesterone therapy should then be given for several courses.

In the older woman, following diagnostic curettage, it is wise to observe these patients, *without hormonal therapy*. If excess bleeding again occurs, hormonal therapy should then be given. The 19-nor steroids have been particularly useful in these cases. Excessive bleeding can generally be stopped within 24-48 hours by the administration of 10 mgm. of Norlutate or Enovid orally every 4-6 hours. When bleeding ceases, the dosage is gradually decreased to 10-20 mgm. daily for a period of three weeks. The medication is then given in a daily dosage of 10 mgm. for 20 days during the next three cycles. It is then discontinued to see if normal cycling

will resume. If breakthrough bleeding should occur at any point, the dosage is increased to 20 mgm. daily.

Finally when the mature patient requires repeated curettage or constant or continuous hormonal regulation of the uterine bleeding, more radical therapy should be considered. In those patients whose reproductive period is completed, total hysterectomy with preservation of the ovarian function is indicated.

C. DYSMENORRHEA.

Painful menstruation of varying degree is an almost universal symptom in young women beginning with the menarche. The intensity of the pain, the duration of the pain and the disability produced in the individual patient, may vary greatly, depending upon several factors, such as the psychogenic makeup or pain threshold of the individual. Dysmenorrhea is actually a local manifestation of some underlying constitutional abnormality in many cases. It is either *primary* (intrinsic or idiopathic) when occurring in the absence of any gross pathology of the pelvic organs, or it is *secondary* (acquired or extrinsic) when it results from some pelvic lesion. The incidence of dysmenorrhea among gynecologic patients is difficult to determine, as their reactions to painful menstruation is variable. Some women are completely prostrated and confined to bed, while others continue their daily occupation with or without the help of mild sedatives. The disabling nature of dysmenorrhea, both mental and physical, makes this condition a very important economic factor in the life of women, especially of the many who are self-supporting.

The precise cause for primary dysmenorrhea is not known and a search for a common etiologic factor has proven futile. Many theories abound as to the nature of this symptom and primary dysmenorrhea has been attributed to many causes, such as endocrinopathies, uterine hypoplasia, partial obstruction of the cervical canal, psychic factors and even allergic states. The wide variation in the response to the many thera-

peutic approaches to this condition, would further indicate the many unknown factors involved.

As to treatment there is no known regime that will produce constant results and there is probably no other condition in which so many different medications have been used. Medical treatment has embraced antispasmodic, antihistamine, vitamin, and insulin therapy, metabolic and psychogenic approaches, and even hypnotism, all without relief in many cases. Severe dysmenorrhea, not relieved by the usual antispasmodic and analgesic drugs, is often relieved by the inhibition of ovulation. Oral administration of a conjugated estrogen, such as Premarin in doses of 1.25 mgm. t.i.d. from the fifth day through the twenty-fifth day of the cycle is usually effective in suppressing ovulation. Similarly, the administration of the 19-nor steroids in daily doses of 10 mgm. will inhibit ovulation and thus relieve many patients with severe primary dysmenorrhea. The withdrawal bleeding that follows within a few days is usually painless unless a gross pelvic lesion exists. Such a therapeutic schedule for two or three cycles often gives the patient enough respite from pain that a better physiological adjustment will result. Painless withdrawal bleeding follows each course of treatment but relief of the dysmenorrhea is temporary and the patient should be so advised.

Testosterone has been used by many gynecologists in an attempt to relieve dysmenorrhea, but it has produced only questionable results in most cases. Furthermore, the possible masculinizing effects of this therapy are rather frequent and undesirable, even though they usually disappear on cessation of the hormone.

Surgical treatment of primary dysmenorrhea has a definite place in those patients in whom no gross pelvic lesion can be found. Simple dilatation and curettage will yield variable results, but will give partial relief in about 50% of the cases. In a still smaller group of patients, presacral sympathectomy

may become necessary, as a final resort to rehabilitate the patient.

D. ENDOMETRIOSIS.

One of the most frequent conditions encountered by the gynecologist today, and one that produces widespread pelvic disability is that of pelvic endometriosis. Whether this condition occurs as the external or internal (adenomyosis) type, the present day treatment has not proven satisfactory in most cases. Surgical treatment is necessary in many of the younger patients in order to preserve the childbearing function, but repeated operations are often necessary due to the high rate of recurrence of this disease.

The treatment of endometriosis is either medical or surgical depending upon the age of the patient, the extent of the disease, the involvement of other pelvic organs, and the desirability of maintaining the childbearing function.

Medical treatment of endometriosis is usually limited to the use of testosterone or estrogens, but more recently both estrogen and progesterones have been advocated. The most frequent endocrine approach to this condition in the past has been the administration of a 10 mgm. tablet of methyl testosterone daily for a period of three months. At this dosage level, masculinizing symptoms or disruption of the menstrual cycle rarely occur. Relief of the dysmenorrhea has been almost complete in most cases, but permanent cures are few. Others have advocated the use of diethylstilbestrol in daily doses of 5 mgm. for a period of three to six months. Nausea and vomiting have been complicating reactions, but are usually controlled by one of the present day antiemetics. If intolerance to stilbestrol continues, the use of some of the other estrogens in comparable doses can be tried.

At the present time, daily doses of Enovid, Norlutin or Provera are frequently used with success. Enovid has been administered continuously for more than a year in the treatment of this condition, with excellent temporary results in many cases. There has

been no proven impairment of subsequent fertility and very careful studies showed no change in vaginal smears, cervical, endometrial and ovarian biopsies, steroid excretion, liver function tests, blood tests and blood chemistry. In many of these patients the relief of pain has been phenomenal and the pelvic lesions regress to a remarkable degree. The ensuing amenorrhea is usually temporary and pregnancy will often follow this method of treatment after therapy is discontinued.

Surgical treatment is indicated in the refractory cases in whom the pain is increasing and the pelvic involvement is becoming more marked. Surgery must be conservative in the younger patients, with preservation of the childbearing function if possible. It is most important that these patients be informed *before* operation of the high incidence of repeated surgery that is so often necessary in controlling this disease, provided the childbearing function is to be maintained. A thorough explanation of this disease, and the limitations of all forms of treatment, should be fully discussed with the patient and her husband if disappointment and possible misunderstanding are to be avoided.

In the older patient who is approaching the end of her reproductive period and in whom excessive bleeding continues, in spite of hormonal therapy or repeated curettages, adenomyosis of the uterus is often the underlying pathology. Abdominal hysterectomy, with or without oophorectomy is the procedure of choice in this age group.

E. THE MENOPAUSE.

There is no condition to which woman is heir to that is more mismanaged and over-treated than is the menopause. This physiological stage in the woman's life has been blamed for many ills completely unrelated to the condition and many unfounded concepts in the minds of the laity have developed during the past. The medical profession unfortunately has often shared in the complete mismanagement of this condition,

mainly because this syndrome can so easily be used as a "medical wastebasket" to deposit any type, degree or design of nervous instability, or mental stress which is so common in this age group. Nervousness, depression, headaches, fatigue, insomnia and excessive worrying are all common symptoms in women from 35 to 50 years of age, yet these symptoms may not be related in any way with the loss of ovarian function—a prime prerequisite to the diagnosis of the true menopause. One of the most common and serious interpretations of the menopause is that any degree of frequent or excessive uterine bleeding may result from this condition. As a result of this misconception, which is often contributed to by the physician, delay in the diagnosis and treatment of pelvic malignancies often result in the loss of life, which might have been saved with prompt diagnosis and treatment. Any patient of this age group, who develops menorrhagia, metrorrhagia or intermenstrual bleeding, should be studied immediately, rather than dismissed as due to the "change of life". Since excessive bleeding is never a feature of the normal menopause, then pelvic malignancy must always be strongly suspected until ruled out by proper study and tissue diagnosis.

The treatment of the menopause is often illogical, excessive, premature, and in many cases irrational. The routine use of hormones in women who present the symptoms of nervousness, which is so prevalent in modern day living, is to be condemned. When hormone therapy is given without proper study and evaluation of the patient this adds to the delay and difficulty in the correct diagnosis and proper treatment.

The largest majority of menopausal patients require no medical or hormonal treatment of any kind. These women are benefited and comforted by a logical and reassuring explanation, on the part of their physician, as to what to expect in order to dispel the many fears that mis-information has produced. In many cases reassurance is all that is required to convince the patient that the

menopause is physiologic, temporary and neither serious nor permanent. In those with some vasomotor instability, mild hot flushes, especially those produced by emotional stress, good results can usually be attained by the use of mild sedatives or tranquilizers. In those with frequent and disturbing hot flushes, insomnia, depression and the other more severe symptoms of the menopause, estrogen therapy is indicated and, in the proper doses, is both safe and effective.

Diethylstilbestrol in small daily doses of from 1-3 mgm. or one of the conjugated estrogens, such as Premarin, are usually quite effective in relieving the symptoms very rapidly. As a rule the conjugated estrogens are more desirable because of less incidence of nausea. Since no proof exists that the administration of estrogenic hormones can cause malignant disease in humans, prolonged treatment by these hormones can be safely continued. The administration should be intermittent and discontinued about every three weeks for a period of several days in order to prevent an increase in the menstrual bleeding, and especially to avoid the initiation of uterine bleeding in the post-menopausal patient which sometimes occurs. Should post-menopausal bleeding occur after amenorrhea was established naturally, and the patient had been receiving estrogens, it is considered by many the duty of the physician to investigate the bleeding by a diagnostic curettage and not assume it has resulted from the hormone therapy.

The administration of androgens or combinations of androgens with estrogens has been recommended by some physicians; however the possible masculinizing influence of the androgens makes this treatment less desirable in most cases. For this reason, androgenic therapy for the menopause has not received wide acceptance.

Summary

1. Some of the more common hormonal preparations used in obstetrics and gynecology have been briefly reviewed.
2. Some of the more frequent and ac-

cepted indications for endocrine therapy have been presented.

3. Although many valid indications for the use of hormones in this field are recognized, care must be taken to avoid the misuse of these preparations.

4. Abnormal vaginal or uterine bleeding should be thoroughly investigated in all cases *before* endocrine therapy is instituted.

5. Hormonal therapy for the management of the menopausal patient is rarely indicated.

6. Endocrine therapy for pelvic endometriosis is temporary, palliative and not curative.

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Recoveries from Paraplegia

Four patients who recovered from apparently hopeless paraplegia were described in the August 31 Journal of the American Medical Association. The cases, reported by Drs. Paul C. Bucy and Roongtam Ladpli, Chicago, concerned patients with paralysis of the legs due to compression of the spinal cord by a tumor.

The two neurosurgeons said the cases illustrate that although in general certain circumstances presage an unfavorable outlook, they do not absolutely preclude a more favorable result.

In one case, a 47-year-old woman had symptoms for 13 years and paraplegia for 18 months, and yet she made "a most satisfactory recovery" following the removal of a tumor from the upper part of the spinal cord. When last seen, she could walk "practically normally".

"The case emphasizes most forcefully that, although the long duration of paraplegia is admittedly a bad prognostic sign, it should not discourage either the patient or the surgeon to the degree that a remedial operation is withheld."

In another case, paraplegia due to a malig-

nant tumor had existed for nearly two months in a 42-year-old woman. After the tumor was removed the patient recovered and has remained well for 18 years, demonstrating that some persons suffering from a malignant tumor of the spinal canal can, with proper treatment, recover and remain well for many years.

It is generally believed that a flaccid paralysis resulting from compression of the spinal cord has a poorer prognosis than a paralysis in which the muscles are stiff. However, they reported a rare case in which a 29-year-old woman recovered after complete flaccid paraplegia of four weeks' duration. This patient's paralysis was believed to have been caused by a spreading cancer, and she was treated nonsurgically. She has remained well for 13 years.

The fourth case was a 27-year-old man with a benign tumor which had destroyed a vertebra which then collapsed. Prompt removal of the tumor and radiation therapy resulted in the recovery of this patient who is relatively well and active 33 years later.

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Management of Enlarged Turbinates

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Although a stopped up nose is a very common complaint, it is frequently mishandled. A plan for diagnosis and treatment is presented.

"As a rule disease as it stalks through the land cannot keep pace with the incurable vice of scribbling about it."

John Mayou de Rachitide, 1668

ELEMENTARY as the problem of a stopped up nose may be, it is a most frequently mishandled and inadequately treated condition in rhinology. It is a common complaint which may be the principal or secondary symptom in roughly one-third of all outpatient routine examinations. In 100 consecutive examinations in our clinic where 35 patients complained of a degree of difficulty in nasal breathing, 11 cases were found to have a mechanical obstruction due to nasal polypi, deviated nasal septum, collapsed nares and the like. The remaining 24 cases were due to obstruction of the nares by enlarged turbinates, and generally diagnosed as rhinitis of varying etiologies. While enlarged turbinates may be regarded as a part of the condition rhinitis, we will continue to refer to enlarged turbinates as though they represented an isolated manifestation. Isolated as they may be, their gross appearance in disease is characteristic and later in this presentation, we will endeavor to correlate the proper treatments required in these entities.

While mechanical obstruction by the

superior and supreme turbinates may effectively block more than half the air-stream, one more commonly finds the anterior third of the inferior turbinate occluding almost all air entry, hence the majority of cases can be treated by removing this obstruction by some means. The single common denominator in the production of an hypertrophied turbinate is stimulation, be it due to chemical, thermal, mechanical or nervous stimuli. The degree and chronicity of the condition ranges from the normal transient reflex swelling of the turbinates one experiences in passing from a cold to a hot environment, to the chronically enlarged turbinate developed in an unusually patent naris, secondary in most cases to a deviated septum. While in most cases only the soft tissues of the turbinates hypertrophy, one does see a degree of deformity and hyperplasia in the bony portion of the turbinate as well. The fact that the ethmoid sinuses may encroach into the center of a middle turbinate should also be kept in mind in seeking the reason for a large middle turbinate.

The upper turbinates are embryologically derived from the ethmoid anlagen, while the inferior turbinate is an appendage of the maxilla. As we inferred earlier, the inferior and middle turbinates appear to be the most susceptible to enlargement and contributory to an obstructed naris. As they are derived from separate embryonic centers, one would expect some difference in structure and function. Such is the case. Microscopically, one finds the inferior turbinate to possess a fibro-elastic stroma rich in cavernous sinusoids, while the middle turbinate shows a stroma with few cavernous sinusoids but a rich supply of mucous type glands. Functionally, the inferior turbinate is principally expansile and contractile, and is poorly

From the Department of Otolaryngology, Gill Memorial Hospital.

equipped to produce a mucoid protection to the nasal mucosa. Its purpose appears to be radiatory and regulatory in nature in admitting a controlled volume of warmed air into the nasal cavity. On the other hand, the middle turbinate is equipped for the efficient production of glandular secretion. My own experience leads me to believe that this rich area of mucus production is imperative in keeping the contiguous mucous mantle of the sinuses flowing into the nares. It secondarily contributes a protective mucoid barrier about the ostia of the sinuses.

Far from being static structures, turbinates are exceedingly sensitive. While the sinusoidal tissue of the turbinates resembles erectile tissue as seen in the genital areas, it is somewhat altered in that the trabeculae in the nasal venous spaces and networks do not contain muscle nor do they receive blood directly from arterioles, but rather through capillary beds. These differences may suggest why sex hormonal therapy in atrophic rhinitis is not uniformly successful.

Parasympathetic postganglionic neurons with their cell bodies located in the sphenopalatine ganglion and sympathetic postganglionic neurons with the cell bodies in the superior cervical ganglion exert control over the turbinal area. The caliber of the blood vessels, therefore the amount of blood and control of the mechanism of glandular secretion in and about the nasal fossae, are determined by impulses transmitted by cranial and thoracolumbar visceral nerves, one opposing the other in action. Somatic sensory branches of the trigeminal nerve pass by way of the sphenopalatine ganglion to supply some of the sensory receptors around the lower turbinates. The specific nerves of cutaneous sensation to the lateral nasal wall consist of branches of the anterior ethmoid nerve, branches of the anterior superior dental, the short sphenopalatine nerve from the sphenopalatine ganglion and twigs from the nerve of the pterygoid canal and branches from the greater palatine nerve. The blood supply of the lateral walls is supplied by the posterior lateral nasal

artery, branches of the sphenopalatine artery, and the anterior ethmoid artery. Venous return is principally via the anterior facial vein (ventrally) the ethmoid vein (cranially) and the sphenopalatine vein (dorsally).

The micropathology seen in an enlarging turbinate can be delineated by the progression of hypertrophy to hyperplasia to polypoid degeneration. The picture seen in hypertrophy is one of physiologic response, the glandular structures dilated and hyperactive with engorged blood spaces. The connective tissue cells of the tunica propria are engorged but no numerical increase in numbers is noted. As the hypertrophic stage becomes more chronic, the epithelial layer thickens and the tunica propria becomes infiltrated with connective tissue cells of all ages and lymphocytes. Walls of the blood spaces are thickened and bone undergoes degenerative and regenerative changes and fibrosis. The glandular elements become compressed, in some cases, dilated or confluent. Elasticity and contractility becomes impaired. In the polypoid degenerative stage, the superficial stratified squamous epithelium becomes moderately thickened and hydropic. The blood filled spaces become excessively enlarged, and the reticular tissues show marked young connective tissue cell infiltration with beginning fibrosis of the cartilaginous portions. The inferior border and posterior extremity of the middle turbinate have a mulberry-like gross appearance in most cases of this advanced stage.

In the treatment of the enlarged turbinate, one should establish the principal causative factor. Secondly, one should attempt to nullify the causative effects of the conditions, and thirdly, an appropriate treatment which preserves much of the mucosa and stroma should be instituted. Admittedly, the treatments we advocate may not in all instances afford complete, permanent relief, but in those cases where only temporary relief may be given, it must be kept in mind that the partially opened

nose of today may progress into the atrophic, patent nares of senescence in a few years.

A working classification of the etiological background is presented.

Etiology:

- | | |
|------------------|-----------------|
| Extrinsic causes | 1. Compensatory |
| | 2. Thermal |
| | 3. Chemical |
| | 4. Mechanical |
| Intrinsic causes | 1. Nervous |
| | 2. Endocrine |
| | 3. Allergic |

As each response by the turbinates is exceedingly complex and ill-understood, no attempt will be made to completely explain the physiology of each entity. We will merely note points of interest about each classification.

Compensatory enlargement is most frequently seen in the nose with the deformed internal nares. This may be due to flaring alae, deviated nasal septum or some cases of nasal fracture. Apparently, an attempt is made to keep air entry at a minimum in these cases of unusual patency, for the continuous excess of air striking the turbinates acts as a most effective stimulus to enlargement. It is common for the soft tissues to enlarge as well as the conchae in these cases.

Heat and cold usually affect the turbinates in a reflex manner and these responses are considered physiological. There are some persons who are subjected to extremes of temperature in their occupations over long periods who develop a somewhat perverted response where enlargement of the turbinates may persist for some hours. Usually these people do not require any particular treatment other than the occasional dose of an oral decongestant to dry up excess secretion.

Chemical hypertrophy is in most cases induced by the injudicious use of drop, spray or vapor nasal decongestants in the assumption that they will keep the nose open. Unfortunately, rhinitis medicamentosa in the large majority of cases can be classified as an iatrogenic disease. There appears to be

no rationale in using these short acting nasal irritants except in the patient who may be harmed by other methods of treatment. In the iatrogenic column, we must also consider the enlargement induced by several of our present day tranquilizing medications. Tobacco smoke is probably one of the major factors in acute hypertrophy of the turbinates and certainly should not be ruled out as a secondary offender in many chronic cases. The chemical by-products of necrosis, infection and bacterial toxins often bathe the turbinates in a film that results in a chronic mucosal irritation. Most frequently, sinusitis is the accompanying factor here. Industrial smokes, fumes, gasses, aerosols and sprays all contribute their own irritant pattern.

Dusts transcend a whole complex of etiological factors, being mechanical, chemical and allergenic in nature. The nasal mucosa in these cases usually presents a somewhat hyperaemic appearance ranging from the acute redness of the simple chemico-irritant to the pale, bluish hydropic turbinate seen in the allergic response. In these cases, treatment will be centered on eliminating the source of dust, or, if this is not possible, blocking the response of the soft tissues.

Nervous factors are usually intertwined with a hormonal background. The college student under stress of the impending examination exhibits a phenomenon akin to acute rhinitis with copious discharge. The other extreme on the scale are the boggy, oedematous turbinates observed in some schizophrenics. The naso-genital reflex has been recognized for years, and, while an apparent sex response, is again dependent on nervous and hormonal factors. Hypothyroidism or hypometabolism has been implicated in labile nasal allergic responses. Pregnancy appears to induce a turgescence of the turbinates which depends on oestrogenic products in the circulation.

Once the etiological stimulus is established, minimizing its effect is of paramount importance before definitive treat-

ment is instituted. This may center about the internal reconstruction of a deformed naris by submucosal resection, or, it may be in separating the nose drop fanatic from his trusty, ever present bottle of liquid decongestant. In the case of inflammatory or infectious by-products, the initial infection must first be cleared by use of local methods, such as, nasal douching and systemic antibacterials or bacteriostatics. Where exogenous chemico-mechanical dusts, aerosols, or vapors are creating the trouble, elimination of these offenders from inhaled air must be carried out. For instance, filtration units in forced air home heating units are beneficial, wet processes in industry may be necessary to keep down dust, spray and dust masks in areas of high atmospheric contamination can be utilized.

In seeking intrinsic factors, we may call upon the protein bound iodine tests to ascertain hypometabolic cases. In such a case, the controlled use of L-triiodothyronine daily is useful in correcting the hypofunction. Hansel's stain will often reveal the typical eosinophilia in the nasal mucus, which is characteristic of nasal allergy, and when a positive test results, the intracutaneous allergy tests will often localize the offending allergen. In these cases, removal of the antigen and desensitization programs are instituted in conjunction with the definitive treatment. It is well to remember that one's own bacterial flora may also constitute a source of allergenic difficulty and should always be suspected.

After minimizing the etiological factors in many acute cases of enlarged turbinates, the structures will reduce in size. In cases where this does not occur, an oral decongestant and antihistamine often help to reduce the tissue. In those patients where decongestants are contraindicated due to hypertensive tendencies, an antihistamine alone will suffice.

In turbinates in which medicamentosa, allergy or chronic infection appear, it is suggested that the intratubinal injection of a suspension of prednisolone tertiary-butyl-

acetate will be efficacious. A good test as to whether this method will work is to apply a 5 per cent cocaine in 1/1000 solution of adrenalin on a cotton pledget to the anterior 1/3 of the lower or middle turbinate for two minutes. The pledget is then removed and if the turbinate has been adequately reduced, one can expect a satisfactory result. The small area of anesthesia produced allows the insertion of a #27 one inch needle on a tuberculin syringe. In children under 14, 0.2 c.c. of the tertiary-butylacetate is used in each injection and in persons over this age, 0.3 c.c. of the solution is used. One to four injections at five day intervals may be necessary to reduce the turbinate. The use of this long acting corticoid has been found to be successful in about 85 per cent of all cases treated in this way, and can be expected to relieve the enlargement for six months to two years. The only dramatic side effect encountered in this treatment has been the delay in the onset of menstruation in some subjects.

In cases where the turbinates have been enlarged for one month or longer, several methods have been found to work with a minimum of discomfort to the patient, and for a permanent result as well. In the turbinate enlarged by compensatory hypertrophy, the nasal airway is equalized by straightening of the septum and a submucosa resection of the bony concha is performed. In this way, little or no overlying mucosa is destroyed. Occasionally at points of redundancy in the resulting overlying tissue, the stroma can be excised minimally. The mucosa should be preserved and never be excised. Should this latter approach prove too difficult, electro-coagulation of the stroma and concha should be carried out. This can best be done with a thermosector at 2.5 on the coagulation scale for 60-120 seconds, and using a two inch sharp needle electrode inside the anaesthetized inferior border of the turbinate, and again at a parallel interval 1/4 to 1/2 inch above this on the upper surface of the turbinate. This is a highly selective method in reducing spe-

cific areas on the turbinate and eventually results in an adequately functioning but smaller turbinate on healing. We have been unable to prove that sclerosing solutions are superior in this respect. They also require more preparation and cannot be controlled or confined accurately in the stroma.

The diagnoses and methods of treatment for the entity of enlarged turbinates are described. It is suggested that if the underlying etiology of the enlargement is minimized, the turbinate will reduce to a more acceptable size. If this conservative treatment fails, then reduction of turbinate size may be attempted by: a) Intratubinal long acting corticoid injection b) Electro-coagu-

lation or c) Submucous resection of the concha.

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and Schenck

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Roanoke, Virginia

Study of Birth Defects

The Journal of the American Medical Association has urged physicians to begin keeping records of all medications taken by expectant mothers, including non-prescription drugs, to help determine any influence on subsequent birth defects.

An editorial in the July 20th Journal said such record keeping is "a big task for members of the profession, especially if the records are to be kept so that complete information can be retrieved." However, at present there is no easier way to ascertain the possible influences of drugs on congenital deformities.

Animal experiments are "too likely to give false answers either negatively or positively", and human studies after the birth of a deformed infant are "notoriously unreliable".

"The recent [medical] literature is replete with after-the-fact reports of congenital abnormalities in infants whose mothers had taken one of another drug during pregnancy."

"Such reports supply numerators without denominators in that they do not record the number of cases in which use of drugs is *not* attended by abnormalities; neither do they take into account the 'natural' incidence of malformations. Furthermore, they are otherwise dependent upon one of the most fallible of mental functions—memory."

Conscientious physicians who undertake this task will "do honor to the mission of their profession."

How Do Physicians in a General Hospital Investigate Pyuria?

ARTHUR W. WYKER, JR., M.D.
Charlottesville, Virginia

The finding of pyuria does not appear to have the same significance to all physicians. An analysis of the various responses is presented.

DESPITE the recent emphasis on bacteriuria and quantitative bacterial colony counts, pyuria remains the most commonly employed criterion of urinary infection. Most hospitals require a routine urinalysis on all admissions so that pyuria is often the first indication that a urinary tract infection may exist. During the course of several years of providing urologic service in a teaching hospital, it became evident that many patients known to have pyuria did not have further investigation of this finding. Accordingly, it appeared worthwhile to investigate the approach taken by physicians at the University of Virginia Hospital to pyuria. This report deals with an analysis of a careful survey of the records of 1000 consecutive patients discharged from this hospital over a period of one month and with the quantitative significance of pyuria as determined by examination of the sediment.

Materials and Methods

The 1000 cases reviewed were consecutive ones discharged from the University of Virginia Hospital between 9-1-61 and 9-30-61 inclusive. No cases were omitted for any reason. Urinalysis was conducted on centrifuged specimens of fresh urine and when

more than one urinalysis had been made, only the highest leukocyte count was used. For this study two white blood cells per high power field were chosen as the upper limit of normal.

To determine the relationship between urine sediment findings and the white blood cell concentration in the urine, a measured number of white blood cells was mixed with different volumes of 0.9% saline. One milliliter of fresh oxalated blood with white blood cell count of 6000 c.m.m. or 6,000,-000 per ml. was mixed with 100 ml. of 0.9% saline and three drops of glacial acetic acid added. This solution was then refrigerated and several hours allowed for lysis of the red blood cells, following which various dilutions were made. Ten milliliters of each suspension were then centrifuged for five minutes at 2000 r.p.m. and the sediment examined under the high dry lens with a mag-

TABLE 1
CLINICAL DISTRIBUTION OF 1000 CASES BY SERVICE

Service	Number of Cases
---------	-----------------

Obstetrics and Gynecology	211
Pediatric Newborns	161
Medicine	120
Surgery	112
Orthopedic Surgery	74
Neurosurgery	45
Pediatrics (excluding newborns)	43
Otolaryngology	42
Neurology	38
Urology	37
Cardiovascular Surgery	36
Thoracic Surgery	34
Ophthalmology	31
Plastic Surgery	28
Psychiatry	9
Dermatology	5
Vocational Rehabilitation	1

1000

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nification of 6 X 44 (264X). The experiment was repeated using blood with white blood cell count of 8000 per c.m.m. or 8,000,000 per ml.

Results

Distribution of Patients According to Service

The clinical distribution of these cases is shown in Table 1.

Though all departments were represented, more than 60% of the cases came from such major services as obstetrics and gynecology, pediatrics, medicine and surgery. Only 37 cases were on the urology service.

Of these 1000 cases, 222 (22%) had no recorded urinalysis, most of these being newborn infants and their mothers. Of the remaining 778, 280 (36%) had more than

men, a ratio of about 2 to 1. The distribution by age and sex, shown in Table 2, indicates that pyuria was noted most frequently in men between the ages of 50-60 and in women between the ages of 20-40.

Investigative Studies Performed

Pyuria was classified into three groups in order to facilitate analysis of the clinical reaction of physician: 2-10 WBC/HPF (Group A), 10-30 WBC/HPF (Group B), and innumerable WBC/HPF (Group C). The investigation of pyuria (Table 3) was quite variable.

Although the extent of urologic investigation carried out by physicians was directly proportioned to the degree of pyuria, 71.7% of Group A, 24.5% of Group B and 15%

TABLE 2
AGE AND SEX DISTRIBUTION OF PATIENTS WITH PYURIA

Age Group	2-10 WBC		10-30 WBC		Innumerable	
	Men	Women	Men	Women	Men	Women
0-10	6	15	0	6	1	2
10-20	1	17	2	0	0	3
20-30	9	31	1	9	0	5
30-40	8	17	3	7	1	3
40-50	7	13	2	0	4	0
50-60	16	14	3	8	0	4
60-70	10	10	1	2	3	4
70-80	4	9	1	1	2	5
80 and over	3	1	0	3	2	1
	64	127	13	36	13	27

two white blood cells per high power field and were classified as having pyuria.

Age and Sex Distribution of Patients with Pyuria

Of the 280 patients with pyuria, 190 (68%) were women and 90 (32%) were

of Group C nevertheless received no further urologic investigation whatsoever. In only 17.8% of Group A, 49% of Group B and 45% of Group C was a repeat urinalysis performed, the simplest and quickest and least expensive way of determining if the pyuria were significant. Urine cultures with

TABLE 3
INVESTIGATIVE STUDIES PERFORMED ON 280 PATIENTS WITH PYURIA

	GROUP A (2-10 WBC/HPF)	GROUP B (10-30 WBC/HPF)	GROUP C (Innumerable)
Number of Patients	191	49	40
No Study	137 (71.7%)	12 (24.5%)	6 (15%)
Repeat Urinalysis	34 (17.8%)	24 (49%)	18 (45%)
Urine Culture	22 (11.5%)	22 (44.9%)	22 (55%)
Urologic X-Rays	15 (7.9%)	5 (10.2%)	10 (25%)
Seen by Urologist	15 (7.9%)	5 (10.2%)	10 (25%)

quantitative bacterial colony counts were made with almost the same frequency and were obtained in 11.5 % of Group A, 44.9 % of Group B, and 55 % of Group C. Of 44 cultures made in the latter two groups, 14 (32 %) showed no bacterial colony growth and 17 (39 %) had more than 100,000 colonies per milliliter (Table 4).

TABLE 4

QUANTITATIVE BACTERIAL COLONY COUNTS ON PATIENTS WITH PYURIA

	Cultures	No Growth	10,000 col./ml. or less	>100,000 col./ml.
Group A (2-10)	22	11	7	4
Group B (10-30)	22	9	7	6
Group C (Innumerable)	22	5	6	11

Roentgenologic studies were rarely ordered and of the 280 patients with pyuria, only 30 (10.7 %) had either an intravenous pyelogram, cystourethrogram or retrograde pyelogram performed. Thirty patients (10.7 %) were seen by a urologist, but of these, 17 were admissions to the Urology Service and only 13 were seen in consultation.

Ability to Detect the Cause of Pyuria

To establish how often the cause of pyuria had been determined, the diagnostic courses of the 40 patients in Group C (those with more than 30 white blood cells per high power field) were studied separately in detail. No etiologic factor was found in 19 patients (47.5 %), but 30 patients (75 %) either had no further tests of any kind or had none but a repeat urinalysis and/or a quantitative bacterial colony count. These minimal tests sufficed in 8 patients (20 %) to demonstrate that their pyuria was probably not indicative of infection; three patients had normal leukocyte counts on catheterized urinalyses made the same day as the one showing pyuria and five had either subsequent normal urinalyses or low bacterial colony counts. In five patients (12.5 %) an

associated etiologic factor was found despite the lack of complete evaluation; two patients had classical acute glomerulonephritis, two were convalescing from recent urologic operations, and one had an indwelling catheter as a part of treatment for a severe burn. Only 10 patients (25 %) of Group C had complete urologic examinations. These studies, however, disclosed significant etiologic factors in eight cases (20 %), 80 % of patients tested. Among the 10 patients tested were five of the 11 in Group C who had bacterial colony counts of more than 100,000 col./ml. and etiologic factors were found in this small sub-group with the same frequency, or four out of five cases, (80 %). Thus of 40 patients with more than 30 white blood cells per high power field, 32 had urinary infections, eight did not. The cause of the pyuria was found in 13 of these 32 patients (40 %).

Correlation of Urine Sediment Findings with Actual White Blood Cell Concentration in the Urine

Various white blood cell concentrations, prepared by mixing oxalated fresh blood in 0.9 % saline, were examined in the usual clinical fashion and the results of these experiments are seen in Table 5.

TABLE 5

CORRELATION OF URINE MICROSCOPIC FINDINGS WITH ACTUAL WHITE BLOOD CELL CONCENTRATION

WBC Concentration/ml.	Unspun Urine	Urine Sediment
80,000	3-5	25-30
60,000	2-4	20-25
40,000	0-2	14-16
30,000	0	10-14
20,000	0	6-8
15,000	0	4-6
10,000	0	3-5
5000-6000	0	2-4
2500-3000	0	1-2

A hypothetical example of how urine volume may affect your interpretation of the urinary sediment findings is seen in Table 6.

Assessment of Physicians' Approach to Pyuria

This study does not warrant drawing any far-reaching conclusions, but it does make apparent certain clinical approaches to pyuria.

1. Since over 70% of the patients in Group A (2-10 WBC/HPF) had no urologic study of any kind, not even a repeat urinalysis, most physicians apparently believe that a white blood cell count in the urine of 4, 6 or 8 per high power field is normal.

TABLE 6

Urine Volume/12 hours	WBC/HPF	12 Hour WBC Output	Interpretation
100 ml.	2	300,000	Normal
200 ml.	2	600,000	Normal
1000 ml.	2	3,000,000	Pyuria
2000 ml.	2	6,000,000	Pyuria

* 3000 WBC/ml. (concentration) is equivalent to urine sediment finding of 2 WBC/HPF.

2. When pyuria was investigated, studies usually consisted of only a repeat urinalysis and a urine culture with quantitative bacterial colony count.
3. Only one out of 10 patients with pyuria had a roentgenologic study of the urinary tract or were seen by a urologist. Most physicians, therefore, apparently believe that such associated etiologic factors as obstruction, reflux, foreign body, etc. play an insignificant role in the pathogenesis of urinary infection.

Discussion

Problems in Quantitation of Pyuria

At the University of Virginia Hospital centrifuged urine sediment is usually used for microscopic examination and for this study, two WBC/HPF were arbitrarily chosen as the upper limit of normal. Wright¹ studied the urine obtained from 5000 men and 1000 women taking insurance physical examinations and noted that there were two WBC or less per high power field in 89% of

the men and 69% of the women. He performed cell counts on urine sediments with simultaneous cell counts of whole urine using a counting chamber and found two WBC per high power field to be normal and to be equivalent to Addis' figures based on 12 to 24 hour collections. Addis² found the average rate of excretion of WBC and small, round epithelial cells in normal adults to be 322,500 in 12 hours or 27,000 per hour, whereas Goldring³ noted 540,000 in 12 hours or 45,000 per hour, and Houghton and Pears⁴ using shorter study periods noted an average rate of excretion

of 66,000 per hour. In determining the presence or absence of pyuria it is important to keep in mind the significance of the urine volume for when the urine is examined under the microscope, the concentration of WBC per urine volume is being determined, not the actual rate of excretion of WBC, the more significant factor. Table 5 correlates the WBC concentration per milliliter with the microscopic findings and Table 6 demonstrates the clinical significance of the WBC concentration in your interpretation of the urine sediment. The tendency of patients with urinary infection to drink large quantities of fluid may so decrease the WBC concentration in the urine that the urine sediment may appear normal.

Urologic Approach to Pyuria

In assessing urinary tract infections, three main factors must be considered: the characteristics of the infecting organism, the reaction of the host, and the associated etiologic factors. Of most significance to the urologist are the associated etiologic factors such as obstruction, reflux, tumor, tuberculosis or

foreign body. The great importance and high frequency of these in the pathogenesis of urinary infections have been indicated both by experimental studies on animals and by clinical experience with patients. Investigators have noted in animal studies that it is very difficult to produce an infection in a normal urinary tract. If urinary tract obstructions were created, however, if a foreign body were introduced or if the urinary tract were traumatized, infection occurred invariably.⁵ Correlating clinical findings of pyuria with intravenous pyelograms, Askins⁶ noted that pyelograms of patients examined after a first attack of pyuria were abnormal in 30% of men and 17% of women, while pyelograms of patients examined after two or more attacks of pyuria were abnormal in 46% of men and 33% of women. In chronic pyuria, says Campbell⁷ congenital anomalies as associated etiologic factors will be found in at least three-fourths of the cases, and in Group C of this study, urinary tract abnormalities were found in 80% of patients examined.

What Is the Proper Approach to Pyuria?

The first step in evaluating a patient thought to have pyuria is to establish whether or not a urinary infection does exist. This is most simply carried out by performing a repeat urinalysis by a more precise technique, and we prefer catheterized urinalyses in females and midstream specimens in males. If these urines are centrifuged shortly after being obtained, examination of this sediment is very informative. In addition to a careful count of cells and casts, a special search should be made for bacteria. Most urinary infections are due to rod-like bacteria, many of which are motile, and they are readily seen when the amount of transmitted light is cut down to near minimum. Normal urine sediment contains few or no bacteria so that the presence of 10 or more rods per high power field is usually diagnostic of urinary infection and is associated with bacterial colony counts of more than 100,000 colonies per

milliliter of urine.⁸ Cocci may be difficult to identify in urine sediment due to their resemblance to crystalloid debris. Almost all urinary infections manifest either pyuria or bacteriuria and most of them show both so if this repeat urinalysis reveals two WBC or less per high power field and no bacteria, urinary infection is unlikely. A specimen for culture is obtained at the same time and if re-examination indicates the possibility of urinary infection, it is submitted for a bacterial colony count.

Once the presence of urinary infection has been established, the next step should be a search for an associated etiologic factor. At this point, intravenous pyelograms with voiding urethrograms and post-voiding upright films are most helpful. If these roentgenograms are completely normal, the likelihood of major abnormalities in the urinary tract is diminished. If, in addition, the patient has a negative urologic history, a course of appropriate antimicrobial therapy may be prescribed with close follow-up to insure complete eradication of the infection. If roentgenologic studies indicate urologic abnormalities, however, or if there is evidence that the patient's current urinary infection is chronic or recurrent, a more thorough investigation of the urinary tract should be obtained through urologic consultation.

Pyuria is not a disease which should be treated but a sign which should be investigated.

Summary

1. One thousand consecutive cases discharged from the University of Virginia Hospital over a one month period were reviewed to determine the physicians current approach to pyuria.
2. Twenty-two percent of the 1000 patients had no recorded urinalysis and of these remaining 778, 280 (36%) had pyuria.
3. Of these 280, 191 (68.2%) had 2-10 WBC (Group A), 49 (17.5%) had 10-30 WBC (Group B), and 40

(14.3%) had more than 30 WBC (Group C) per high power field.

4. 71.7% of Group A, 24.5% of Group B, and 15% of Group C had no further urologic investigations of any kind.
5. A repeat urinalysis was performed in 17.8% of Group A, 49% of Group B, and 45% of Group C.
6. A urine culture with quantitative bacterial colony count was performed on 11.5% of Group A, 44.9% of Group B, and 55% of Group C.
7. Roentgenologic studies of the urinary tract were performed on 10.7% of the 280 patients with pyuria and similarly 10.7% were seen by a urologist.
8. When a complete urologic investigation was made of 25% of Group C, the incidence of a significant etiologic factor as cause of the pyuria was found to be 80%.
9. The relationship between the WBC concentration in the urine and the urine sediment findings was determined.
10. The importance of associated etiologic factors in the pathogenesis of urinary

infections was emphasized and a practical approach to pyuria presented.

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New Books

W. B. Saunders Company features the following new books and new editions in their full page advertisement appearing elsewhere in this issue:

Current Pediatric Therapy—Edited by Gellis and Kagan. This new book gives you the best treatments, currently in

use by leading authorities, for over 300 diseases and disorders that afflict children.

Mainland—Elementary Medical Statistics. A New (2nd) Edition—revised to bolster your statistical thinking and also your use of the standard statistical formulas and procedures.

Extremity Injuries from Household Tools and Equipment

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The frequency and severity of injuries in the home and on the farm have increased as power tools have come into general use.

IT IS OUR IMPRESSION that there has been an increase in the last few years of injuries caused by home tools and equipment in increasing severity, especially in the suburban and rural home. These injuries have been causing partial and complete disability of the forearms, hands, legs, and feet. While such accidents twenty or thirty years ago were confined to factories and industrial shops, gradually similar accidents are occurring in or about the home. Motorized appliances and tools such as motorized saws, drills, power mowers, washing machines and on farms, feed mixers and conveyors are introduced for common every day use; these coupled with the do-it-yourself tendency and expensive labor have increased the accident percentage. Tools such as axes, sickles, and knives remain responsible for most of the injuries to the hands and feet.

The injuries and wounds produced by this variety of tools and machines vary depending on the blade shape, sharpness, and its movement. They can be categorized into two main groups which we will discuss briefly and illustrate representing unusual cases.

From the Division of Plastic and Maxillofacial Surgery, Department of Surgery, University of Virginia Medical Center, Charlottesville.

Laceration of the Skin and Deeper Structures

These wounds occur from sharp blades such as saws. If the patient is seen within the first twelve hours after the injury it is usually repaired immediately. Immobilization for extremity wounds is necessary until the skin has sealed well and the edema has subsided to a considerable degree. When tendons are repaired, three to four weeks is minimal immobilization required and for nerves, two to three weeks are required depending on the tension of the suture-line.

Case #1. R.N., History number 49-68-91

1. Motor saw injury of thumb involving flexor pollicis longus and bone six hours old.
2. Immediate repair.
3. Repair of bone and tendon as seen by x-rays.
4. Result: six-weeks post-operative at work without disability.

In some cases where rotary blades are involved, multiple lacerations and contusions occur in the form of a wringer injury.

Case #2. O.H., History number 39-88-89

1. Wringer injury of a nine-year-old boy due to a feed conveyor. Posterior tibial nerve and achilles tendon torn.
2. Immediate debridement repair of nerve and tendon-suturing of wound loosely and leaving the rest open to determine viability and prevent sepsis.
3. Skin postage grafts one week later.

Four or five months later the patients walks without any disability.

Avulsions and Amputations

These accidents are usually the result of axes, saws, and power mowers. Within twenty-four hours the injury can be treated because debridement is usually necessary and presence of antibiotics is a helpful factor. Grafting and pedicle flaps are necessary for

depends on several factors. For the foot, closure without flaps is preferred unless by shortening it will jeopardize the gait and stability by compromising the transverse or longitudinal arch of the foot. Avulsions on weight bearing surfaces require a pedicle flap.

In the hand, preservation of a finger

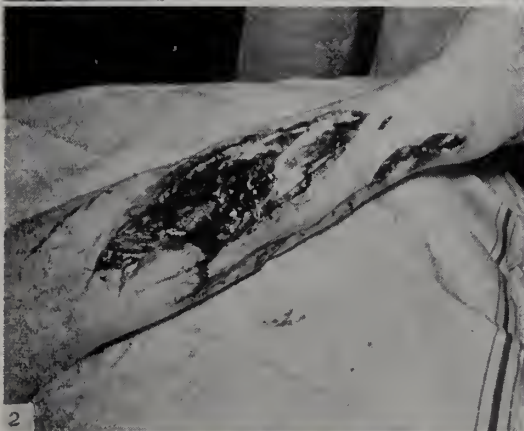


Case #1, History number 49-68-91.

many of these injuries depending on the particular case; however, split skin grafts or full thickness grafts are used whenever vital structures are still protected; otherwise, pedicle flaps become necessary.

To preserve length, add or shorten a digit or a foot is an important decision and de-

length depends upon which finger is involved. The thumb and index finger obviously are more conservatively treated than the third or fourth finger. The level of amputation, its direction, and the profession of the patient play as major factors in the decision. Occasionally cosmetic appearance is of importance to some patients.



Case #2, History number 39-88-89.



Case #1, History number 49-78-20.



Case #1. W.E.K., History number 49-78-20

1. Avulsions of soft tissues three hours old.
2. Debrided and covered with full thickness graft from arm.
3. Six weeks post repair satisfactory cosmetic and functional result.

Case #2. P.M.W., History number 33-73-05

1. Amputation of thumb with an ax obliquely through proximal phalanx.
2. Preservation of length by using amputated proximal phalanx as a bone graft—notice Kirschner wire fixation.
3. Covering of bone graft with abdominal pedicle flap.
- 4 & 5. Four months post-operative, patient has satisfactory length and function of thumb.

Case #2, History number 33-73-05.

Case #3. D.H.D., History number 50-14-79

1. Amputation of three toes and part of dorsum of foot. Metatarsals exposed from power mower.
2. Immediate coverage with cross-leg flap to preserve width and length of foot.
3. Cross-leg flap divided and healed.

used the same tools or equipment for several years without records of past accidents. It seems that the average accident is due to lack of guards in the tool or machine. Of course, many people are very careful and avoid such injuries, but frequently individuals slip or the tools fall from the hand and in such instances, safety mechanisms should protect



Case #3, History number 50-14-79.

4. Stable gait and can wear shoes comfortably.

Discussion

Contrary to a quick impression of "accident prone" as a cause of these mishaps, most of our patients seem to be responsible and cautious individuals. Many of them have

the individual. To go into details and aspects of the problem, it would require further technical knowledge and investigation. It is difficult to estimate the incidence of such accidents as related to the type of machine or as related to the frequency of its use without more effort in better documentation. I believe there is no such recording system as

the ones employed by factory safety departments or the records of the motor vehicle departments in cases of car accidents. It may not be necessary, yet some home basements are becoming machine shops and our tendency to use motorized gadgets for any purpose is constantly increasing. We should attempt to keep very accurate records in our office charts as to the type of the injury tool and explicit descriptions of how the accident occurred and how possibly it might have been prevented by more care on the patient's part or better safety guards in the machine. If such records are compiled and reported, it

could be the basis of some helpful recommendations to manufacturers as well as to the consumers.

The treatment of such injuries requires a thorough understanding of wound repair, the anatomy, the physiology of the structures involved. The application of reconstructive techniques such as skin grafting and pedicle flap coverage is necessary in many of the more severe and compound injuries.

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Gelatin Sponge Heals Bedsores

An absorbable gelatin sponge inserted once a day in bedsores has led to healing in about 30 days in 24 patients, Drs. Leslie W. Freeman and John E. Joyner, Indianapolis, have reported.

So far, laboratory studies have not been helpful in establishing a possible reason for the effectiveness of this treatment, they said

in the June 8 Journal of the American Medical Association.

The treatment was based on the successful use of gelatin sponge in a dog with a large ulcer which healed in a week.

Bedsores have long been difficult problems in healing and many different substances have been used without dramatic results.

Total Hysterectomy Combined with Prophylactic Bilateral Oophorectomy in Treatment of Breast Cancer

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DUANE C. RICHTMEYER, M.D.
Arlington, Virginia

Removal of both ovaries following radical mastectomy for carcinoma of the breast is recognized as a desirable procedure. Once the ovaries are gone, the uterus serves no useful function but remains as the site of potential disease. It should be removed at the time of oophorectomy.

IT HAS BEEN DEMONSTRATED by animal experimentation and clinical observations that estrogens have a marked influence upon the course of some breast malignancies.

Beatson¹, in 1896, recognized this fact and was one of the first to demonstrate that oophorectomy could cause regression of metastatic breast cancer.

In the following years other investigators became aware of this. One of the first, who, because of disappointing results in young women resulting from treatment of breast cancer, added prophylactic oophorectomy to radical mastectomy was Dr. J. Shelton Horsley.² He began to use this procedure against cancer of the breast in 1937 and reported his results in 1944.

Osborn and Pitts³ find that this procedure

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showed the most proportion of favorable results in premenopausal women. These authors also found in a series of 63 cases of breast cancer 14 cases with metastases to the ovaries. This finding also should be an influencing factor in augmenting radical mastectomy by bilateral oophorectomy as part of the treatment of cancer of the breast.

The time to do this additional operation varies. Our practice was to perform the oophorectomy seven to 10 days after the radical mastectomy, depending on the rate of recovery of the patient. However, Horsley⁴ believed it could be done at the same time as the radical amputation of the breast. He suggested that while the incision of the radical amputation is being closed by either the assistant or the surgeon, the oophorectomy can be carried out by one or the other and he followed this procedure in his clinic.

More recently Huggins and Bergenstal⁵ introduced adrenalectomy as a further method to help retard metastatic cancer of the breast. This procedure was soon followed by hypophysectomy by Luft, R. and Olivecrona, H.⁶

In the voluminous literature reporting the prophylactic ablation of the ovaries as part of the therapy for breast malignancies, no mention is made regarding the fate of the uterus. It is realized, insofar as we know, that the uterus probably has no effect on the breast malignancy or vice-versa.

It is a well known and accepted principle of gynecologic surgery that the uterus should practically never be left intact when the ovaries are removed. However, G.

Horsley⁷ sees no necessity for removing the uterus when the ovaries are removed solely for the purpose of decreasing estrogens after a radical mastectomy for cancer of the breast. Apparently, most general surgeons who do the bulk of breast surgery are in agreement with this premise and leave the uterus intact.

In the last few years the authors, in selected cases, have added total hysterectomy to bi-lateral oophorectomy following radical mastectomy in breast malignancies. The basis for the selection of cases in which total hysterectomy has been combined with bilateral oophorectomy has been the attitude of the patient and her emotional makeup. The principles of gynecological surgery in not leaving the uterus intact after bi-lateral oophorectomy is explained to her briefly. The prophylaxis from conditions to which the uterus is subjected is also explained. If too much reticence is expressed or noted, the less formidable operation of bilateral oophorectomy is done before the patient leaves the hospital. If the more complete operation is accepted willingly the patient is advised to return to the hospital in four to six weeks for this procedure. To date we have adopted this procedure in a number of cases and recently have been somewhat more insistent that the uterus be removed along with the ovaries.

Since our experience has grown we have found that most women seem to accept the total operation willingly after the reasons for the more formidable operation are explained. We have become more aggressive and have made this procedure a routine in premenopausal women or in women who are two to three years post-menopausal.

When we first began to combine the operation of bi-lateral oophorectomy and total hysterectomy with radical mastectomy, we could not determine how much time should be allowed to elapse between the breast surgery and the pelvic surgery. We now feel that about a month should elapse between the radical breast amputation and the pelvic surgery. Experience has

taught us that it takes this length of time for the patient to make a sufficient recovery from the breast surgery and to condition herself for the additional major pelvic surgery.

We report herewith four representative cases in which this procedure was followed. As seen in cases 1 and 2, the elapsed time is longer than in cases 3 and 4. The first two cases are among our earlier ones, while we were in the process of trying to determine the optimum length of time between the two procedures. Cases 3 and 4 are later cases, when we had decided that a month was sufficient time to allow between the two procedures.

Case Reports

(1) Patient, I.M.M., age 29, was admitted to the hospital 2/10/60. A radical mastectomy for cancer of the breast was done on 2/11/60 and she was discharged 2/20/60. She was readmitted 3/29/60. A bilateral-salpingo-oophorectomy and total hysterectomy was performed on 3/30/60. She withstood the procedure very well and was discharged 4/7/60.

(2) Patient, A.S., was admitted on 5/20/58. Radical amputation of left breast was performed on 5/21/58 and she was discharged on 6/1/58. Second admission was on 7/22/58 at which time a bilateral salpingo-oophorectomy and total hysterectomy was done. She tolerated this operation very well and was discharged 8/2/58.

(3) Patient, M.H.M., was admitted to hospital on 9/14/61. Left radical mastectomy was done on 9/15/61. She was discharged on 9/25/61. She was readmitted on 10/15/61. On 10/16/61 a bilateral salpingo-oophorectomy and total hysterectomy was done.

(4) Patient, M.T.O., age 49, was admitted to the hospital 10/20/60. She underwent a radical mastectomy on 10/21/60 and was discharged 10/30/60. Readmission date was 11/21/60. A bilateral salpingo-oophorectomy and total hysterectomy was performed on 11/22/60. This operation was

well tolerated and she was discharged 11/29/60.

Discussion and Comment

In the ample literature it has been definitely established that ablation of the ovaries in the menstruating women, or one who is two or three years post-menopausal, who has been subjected to a radical breast amputation is a valuable procedure.

However, no one apparently has given any serious consideration to one of the basic principles of gynecological surgery which is not to leave the uterus intact when a bilateral oophorectomy is done.

Over thirty years ago William P. Graves⁸ wrote as follows in reference to this problem.

"The operation of double oophorectomy without removal of the uterus is to be deplored in that it is usually followed by discomforting pelvic and vasomotor symptoms, often of extreme severity and long duration."

Coupled with his observation and opinion there is also the question of an early asymptomatic malignancy of the uterus. Although we have not found any unsuspected uterine malignancy in our cases, the possibility is always present.

So far as our present state of knowledge of the physiology of the uterus is concerned, it has only two major functions, namely, to receive the fertilized ovum, nurture it, and expel it at the proper time. Secondly, it is the main organ from which menstrual blood originates and is discharged. However, in contrast to these two functions, it is the seat of various pathological and dysfunctional conditions. The most common is the dysfunctional menstrual disorders; some of these menorrhagia are due to various types of hyperplasia, one of which—adenomatous hyperplasia—is considered by some gynecological pathologists as "pre-cancerous".

Benign lesions of the cervix, with irritating and annoying leukorrhea, are quite frequently present in these women. Asymp-

tomatic adenomyosis and leiomyofibromata, which may become symptomatic in time are found. The possible development of cancer of the uterus and/or of the cervix is always present.

Because of these pathological and functional disorders that the uterus is heir to, plus the possibility of very early asymptomatic malignancy, the principle of gynecological surgery of usually removing the uterus, when double prophylactic oophorectomy is done as adjunct treatment of cancer of the breast, should be seriously considered. Therefore, since bilateral prophylactic oophorectomy is a valuable adjunct to radical mastectomy for cancer of the breast in menstruating women or in women two to three years post menopausal, we suggest the feasibility of combining total hysterectomy with ablation of the ovaries in order to eliminate an organ that is the seat of dangerous and annoying pathological and dysfunctional processes. We have, of course, weighed the fact that morbidity is greater; also that the possibility of surgical accidents is increased in the more formidable operation of total hysterectomy. However, the advantages gained by adhering to the basic principles of gynecological surgery offset the slightly increased risk.

Summary

1. The prophylactic surgical ablation of the ovaries as an adjunctive treatment to radical breast amputation in cancer is briefly reviewed and discussed.

2. Palliative ablation of other estrogen producing or regulating organs, as the adrenal and hypophysis, is noted.

3. The basic principle of gynecological surgery of practically always removing the uterus when double oophorectomy is done is discussed.

4. Because of the numerous functional and pathological conditions to which the uterus is heir, the feasibility of combining total hysterectomy with prophylactic bilateral oophorectomy following radical mastectomy for cancer of the breast to elimi-

nate dangerous and annoying pathological conditions of the uterus is discussed.

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Gamma Globulin for Allergies

Gamma globulin has been used successfully to treat highly allergic children, according to Drs. Bernard Redner and Harry Markow, Brooklyn, N. Y. The children, ranging in age from 4 to 13, had bronchial asthma, allergic rhinitis, or both, with upper respiratory infections as a frequent complication, the two physicians wrote in the August 31 *Journal of the American Medical Association*.

In a study of 30 children, the patients were divided into two groups. One group was given gamma globulin at first and then switched to an innocuous injection, while the other group was given the placebo injection first and then switched to gamma globulin. Of the 15 patients initially treated with gamma globulin, 13 did exceptionally well while 2 did not improve. When the 13 who did well were later given a placebo, 11 became worse. Of the 15 patients started on the placebo, 11 did not improve, but when these 11 were shifted to gamma globulin, 10 showed a marked improvement.

"Under gamma globulin therapy, chil-

dren were transformed from morose, anxious, and irritable individuals into happy, energetic, and alert youngsters. Children with continuous 'colds' before gamma globulin therapy and who, according to the mothers, were 'sick every other day,' now felt exceptionally well, except for an occasional cold and were not absent from school." Many children given gamma globulin had their usual quota of colds, but in most instances there was practically no asthmatic flare-up.

The gamma globulin was administered by injection into the skin of the arm in "minute" weekly doses, one-tenth of one cubic centimeter. Larger doses injected into muscle for the treatment of allergic children in other studies have led to conflicting opinions about the effectiveness of this treatment.

These small doses of gamma globulin cannot materially affect the gamma globulin levels of the blood plasma, and tests show that good results were obtained with patients having high, low and normal levels of gamma globulin.

Obscure Gastrointestinal Lesions of Spontaneous Hemorrhage

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Gastrointestinal bleeding of obscure origin is one of the manifestations of spontaneous hemorrhage. The mechanism of this state is discussed.

THE PRESENCE of a huge quantity of free blood in the gastrointestinal tract without a lesion large enough to account for it, or no lesion at all, is a strange paradox and a remarkable feature of Spontaneous Hemorrhage. This disease, which I have defined and described many times, has a higher morbidity and mortality than any other human affliction. Epistaxis, intimal bleeding which is the precursor of atheromata and the occlusion of major arteries such as the cerebral and coronary vessels, so-called idiopathic genito-urinary bleeding, pulmonary hemorrhage, including those associated with tuberculosis, and many others are some of the forms of this disease. Not the least among them is gastrointestinal bleeding from uncertain sources and of obscure origin.

Obscure lesions have no permanence and exist only when a hemorrhage is actually in progress. One of the primary concepts of Spontaneous Hemorrhage is that the organism has the capacity to prepare a bleeding state, create a site for bleeding and then, after the hemorrhage is over, to dissipate this whole process. This progression of events can be seen easily in the nose where the bleeding lesion is usually on the septum. There the lesion appears and disappears and, when the patient is not bleeding, there is no

evidence whatsoever it ever existed unless the episodes have been so numerous that an area of telangiectasia has been formed. This same series of events also occurs in the gastrointestinal tract where, in order to demonstrate the bleeding lesions, it is often necessary to catch them, as it were, in the act.

The lesions of even exsanguinating hemorrhages are no exception. Pathologists and surgeons are long familiar with the failure to find bleeding lesions in the esophagus, stomach and colon either at operation or autopsy in a large percentage of cases. Although it is obvious that a lesion releases the blood, the search for it often is frustrating.

In the nose the preparatory syndrome for bleeding, which I have described elsewhere,^{1,2} usually is overlooked because the hemorrhage occupies the immediate attention. When the bleeding is arrested, especially with intravenous estrogen, the aperture of the lesion is wide open and without clots. A few hours later, the whole process disappears and the septum is left with hardly a trace of its former hemorrhagic turbulence. While epistaxis is associated with many conditions, no other explanation has been offered for this kind of bleeding when it occurs by itself or when it accompanies another disease. The bleeding of epistaxis is often much more profuse than the bleeding of an injured nose, unless, as rarely happens, a major artery is divided. Spontaneous bleeding differs from surgical or traumatic hemorrhage in many respects and the treatment of one is not adequate for the other.

The symptoms and signs of Spontaneous Hemorrhage depend upon where it strikes. The lesions will vary according to the structure selected as the bleeding site and whether

arteries, veins or a capillary bed are involved. The possibilities are infinite and the method of selecting the bleeding site is as unknown as that for selecting the target organs of psychosomatic syndromes. Bleeding gastrointestinal lesions, just like those in the nose, do not betray their presence before the hemorrhage starts. This fact applies to esophageal varices, bleeding peptic ulcer, hemorrhage associated with colonic diverticuli or uncomplicated internal hemorrhoids which in reality are varices of the distal end of the gastrointestinal tract. A bleeding point or points in the latter are seldom found and this kind of hemorrhage can be stopped easily with intravenous estrogen.

The Nature of the Bleeding in Spontaneous Hemorrhage

Three facts stand out in all spontaneous bleeding. First, there is no abnormality of the blood and the absence or presence of the hemorrhagic factors, as far as these are known now, do not determine whether an individual will bleed or will not bleed. Second, no one, regardless of the disease, bleeds all the time; therefore the bleeding is episodic with intervals of days to sometimes years between the hemorrhages. Third, the bleeding must come from a lesion of some kind even though it cannot be found. These facts apply as well to the hemorrhagic disorders, which, while not included in this discussion, nevertheless have some of these characteristics. For example, the bleeding of hemarthrosis, the most common sign of hemophilia syndromes, must come from an open vessel in a joint. Since there are intervals between the episodes, there must be differences in the organism when there is no bleeding and when bleeding is active.

What these differences are is a matter for speculation at present. It is my contention that they are related to an endocrine imbalance. The only evidence available now to support this position is the results of hormonal therapy. Trieger and McGovern³ state that prednisone reduces significantly

the tendency to unwarranted postoperative hemorrhage after dental extractions in patients with hemophilia. Roberts^{4,5} found that intravenous estrogen would prevent bleeding in patients receiving long term anticoagulant therapy who bled spontaneously, as well as after tooth extractions. He also found that intravenous estrogen would arrest the bleeding in diabetic retinitis and hasten the absorption of extravasated blood;⁶ and, when combined with corticosteroids, would arrest the bleeding from esophageal varices.⁷ I have reported one case in which intravenous estrogen alone repeatedly stopped the bleeding from these varices.⁸ Jacques⁹ says: "Hemostasis depends upon blood coagulation, platelets and vascular integrity. Experimental results demonstrate that hemorrhage occurs when any two of these mechanisms are deranged simultaneously. Hormonal and neural factors affect the blood vessels and in this way determine spontaneous hemorrhage with anticoagulants. Spontaneous hemorrhage has a multiple causation."

My extensive and successful experience with the use of intravenous estrogen, supported by the experience of many others, to arrest spontaneous bleeding in patients who have no demonstrable abnormality in their blood convinces me of the hormonal origin of spontaneous hemorrhage regardless of where it occurs. Occasionally, the estrogen has been supplemented with cortisone which, since it is a hormone, upholds this belief. I have ventured the hypothesis that this kind of bleeding is a variant of menstrual bleeding and more specifically of so-called functional uterine bleeding,^{10,11} regardless of sex, because the former is the result of normal endocrine fluctuations while the latter is a disturbance in this endocrine cycle. Spontaneous bleeding is associated with so many disparate diseases not related to hemorrhage and can come from so many diverse lesions, such as diverticuli, polyps, ulcers, varicosities and tumors as well as infections, such as tuberculosis and rheumatic fever, that it must have an origin of its own.

Characteristics of the Obscure Lesion

The delineation between the evident and the obscure lesion is not clear even in the stomach. Indeed, what was considered to be an evident lesion before operation is not easily found and is the justification for blind gastrectomy. Even an open artery does not always betray itself until the resected stomach is examined.

Bleeding peptic ulcers and inflammatory ulcers are not varieties of the same disease. Bleeding peptic ulcers are as a rule asymptomatic; they are smaller and in a large percentage of cases cannot be detected by the roentgenologist, the surgeon and sometimes the pathologist; they seldom provide any indication on the serosa of their presence while inflammatory ulcers usually do; the vessels beneath the base of a bleeding ulcer are wide open as is to be expected, whereas those beneath inflammatory or perforating ulcers are obstructed, not by a thrombus but by an organization of cells that eventually ends in endothelial hypertrophy which, for its formation, does not depend upon the chronicity of the ulcer; and the bleeding ulcer will disappear without a scar upon the conclusion of the hemorrhage.¹² A bleeding peptic ulcer is a lesion created for the express purpose of bleeding. It is therefore intended to bleed right from its inception and the hemorrhage does not occur because the ulcer reached the artery before its occlusion was completed. No effort at all has been made to block it either by a thrombus or by hypertrophy of the endothelium. In fact, as Osborn,¹³ Lewison¹⁴ and I have described the bleeding point, the artery has been enlarged by an aneurysmal dilatation which is destroyed by necrosis from within and only partially by digestion. Osborn states further that the gastric arteries are unique in that they are almost immune from the ordinary forms of arteriosclerosis. Furthermore, the vessels anastomose so freely that there are no end arteries and both ends bleed profusely when open. Hence twice as much blood can escape from a gastric artery as from other arteries.

The obscure lesion bleeds through an interruption of the epithelial surface and, in that sense only, is it an ulcer. It cannot be otherwise since there must be an aperture to permit the escape of blood. But it is not an ulcer as that term is generally used and that is why it is asymptomatic and so elusive. Moreover, bleeding associated with inflammatory and perforating ulcers does not come from the evident lesion but from other areas of the stomach according to Kozol and Meyer.¹⁵ The opinion expressed by Delaney¹⁶ agrees with my contention that these hemorrhagic sites in the stomach may be the local manifestation of a systemic disorder and concurs with that of Nicoloff¹⁷ and his group that they may be "stress" ulcers.

The apertures of the obscure lesion, as will be shown presently, may be almost microscopic in size, yet they can permit the escape of such large quantities of blood that forces much more powerful than the systemic pressure must be in operation at the bleeding area. It would seem that these forces are so strong that the blood does not just escape because a vessel is open but is actively expelled. As Lewison says, the severity of the hemorrhage has no relation to the size of the lesion or the magnitude of the vessel. I believe these lesions are created in the same way as those in the nose, the brain, the eye, the lungs and elsewhere. The principal differences between them are the variations depending upon the structures in which they have been created and that in the stomach they are subjected sometimes to the action of the gastric juices.

Obscure lesions of the gastrointestinal tract can be divided into three categories: lesions that are present but cannot be found, lesions so minute that it seems impossible that so much blood could have been released from them and lesions that have vanished. It is probable that all of these categories may represent the transitional states of a single lesion. Spontaneous bleeding, regardless of whether it is in the joint of a hemophiliac or from the nose of an individual who, as far as can now be determined, has no rec-

ognizable hemorrhagic defects, must come from a lesion that has undergone the transition from preparation to bleeding. When that finally comes to an end, the lesion undergoes such metamorphosis as the structure in which it is located directs. For example, in the walls of arteries, hemorrhage from a vascularization process is, according to Paterson,¹⁸ Wartman,¹⁹ Morgan²⁰ and many others, the focal point for the development of an atheroma, a thrombus or spasm of the arterial wall so severe as to cause shock and death. Elsewhere, as in the brain, the eye or in other closed spaces, it may cause immediate, irreparable damage. If the hemorrhage is from an epithelial surface, as in the nose and stomach, the blood can escape without doing any damage and the lesion will disappear.

At what point in the development of a bleeding lesion does the hemorrhage begin and what precipitates the bleeding are at present unknown. In the gastrointestinal tract, the bleeding lesion disappears and a new bleeding lesion is prepared when the bleeding state recurs. Indeed, Grace and Mitty²¹ believe that gross gastrointestinal hemorrhage recurs in approximately the same percentage of those who were never operated upon as in those who had subtotal gastrectomy to prevent the recurrence of bleeding. Thus the removal of such a lesion in the stomach is no assurance that bleeding will not recur.

After empiric subtotal gastric resection, a large area of gastric mucosa still remains that can and frequently does provide a site for recurrence of bleeding; and total resection may not only leave the last state worse than the first by creating a gastric cripple but also transfers the bleeding lesion to another and perhaps more vital area. It is by no means uncommon for patients to bleed from different sites during successive bleeding states and finally to expire from cerebral hemorrhage or coronary thrombosis. Such a series of events happened to the patient described in Case 1 in my discussion of the use and abuse of estrogen therapy.²² This patient,

after having bled from the nose and lip on numerous occasions, finally succumbed after that article was published to a hemorrhage into the pons.

Hence, the unquestioned elimination of a lesion in the gastrointestinal tract means only that the immediate threat has been turned aside leaving the bleeding disease intact. The hemorrhagic factors in this disease are still unknown. The known factors, as Diamond and Porter²³ have so clearly stated, are unreliable for predicting who will bleed or who will not bleed.

Illustrative Lesions

Case. 1. F.A.D. male, age 56, had been admitted to the hospital on several occasions for severe pyelonephritis. He had had frequent epistaxis and at least one subarachnoid hemorrhage from which he recovered without any residual paralysis. Immediately before the present admission there was severe hemoptysis and melena. The hemoglobin was 13 gms. per 100 cc. but soon dwindled to 7.5 gm.

The hemoptysis ceased but the melena continued and some of the blood that was passed became bright red. Fifteen units of blood were given during the next 10 days but the hemoglobin continued to decline until it was only 4.5 gm. per 100 cc. Several injections of intravenous estrogen promptly halted the bleeding. The hemoglobin then increased to 8 gm. without transfusions but he succumbed to the nephritis and died in uremia.

At autopsy a bleeding point could not be found in the esophagus, stomach, duodenum or jejunum. In the last 25 cm. of the ileum there was a fairly well defined area that did not reach the ileo-cecal valve in which the mucosal pattern was replaced by smooth elevations separated by somewhat dull granular areas. One of these areas was bright red and measured 5 x 3 x 1.5 mm. Sections from this area showed an ileal ulcer with a well defined border although many of the villi were still apparent. The submucosa was thickened by loose non-specific fibrous tissue

containing scattered histiocytes, lymphocytes and plasma cells. The muscularis and serosa were not involved. This bright red area contained a dilated arteriole with mural necrosis extending even into the submucosa and involving all layers and part of a branch. The surrounding exudate contained polys and extravasated red cells. (Fig. 1)

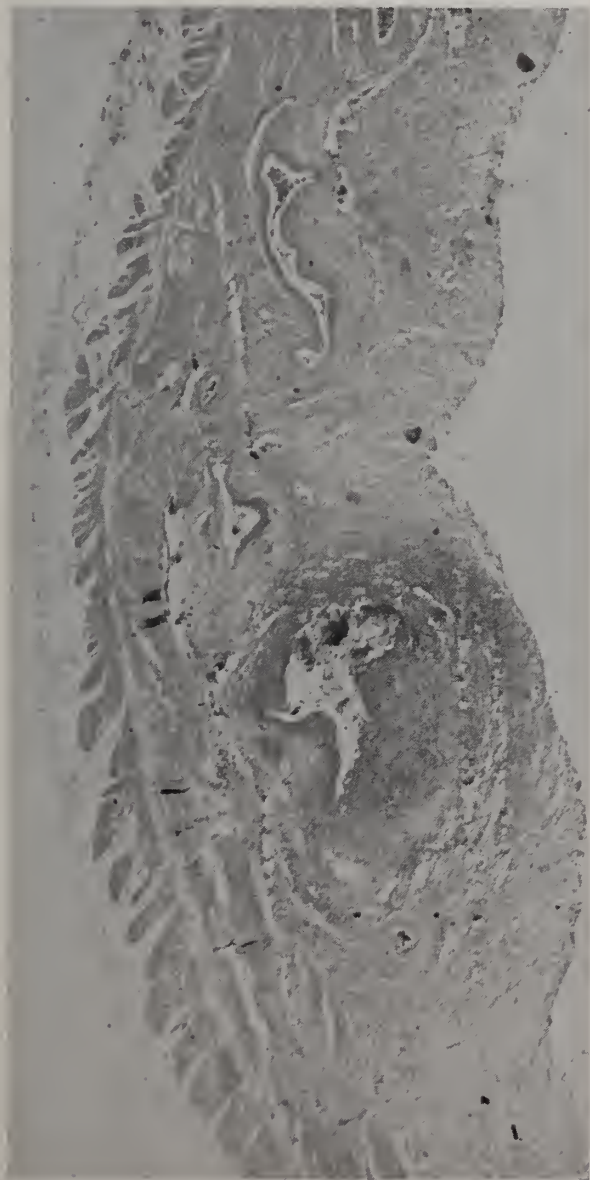


Fig. 1. The bleeding lesion of Case 1. This micro-aneurysm is near the ileocecal valve. Note that the vessels around it are essentially normal in size. The wall of the aneurysm has been destroyed by the vascular toxin I have postulated, not only at the epithelial surface but also within the submucosa. There is no other reaction in the submucosa, the muscular layer and the serosa. Hence this lesion could not be found without exposing the lumen of the intestine unless one of the new procedures using isotopes would help locate it.

This case supports my contention that although the hemorrhage may complicate another disease, it is still an entity in itself. As so often happens, the site of bleeding was not constant and changed during succeeding preparations of the bleeding state since he had had epistaxis, hemoptysis and subarachnoid hemorrhage. The minute lesion in the ileum could hardly have been discovered by any means short of autopsy as there was no indication of its presence on the peritoneal surface, yet it was large enough to permit the release of large quantities of blood over a considerable period of time.

Case 2. A 25-year-old man was admitted to the hospital with a history of vomiting blood for about 18 hours. He had no previous gastrointestinal symptoms and no bleeding. A large amount of blood had been expelled, yet he seemed to be in good condition. Several transfusions were given along with injections of intravenous estrogen. According to my interpretation of the need for transfusions, they were unnecessary in this case and may have prolonged the bleeding. However, in the judgment of the surgeon and internist, operation was indicated and laparotomy was done the day after admission.

Blood could be seen in the duodenum, jejunum and ileum but there was no indication on the peritoneal surface of where the bleeding point could be. Upon opening the stomach near the pylorus several large clots were present but no active bleeding. In the search for a bleeding point, a minute defect was found which might have been the bleeding lesion. It was excised and when fixed in formalin measured only 3 mm. in diameter. The lesion itself was less than 1 mm. in diameter. Had the operation been done upon admission, the surface would have been bleeding profusely and subtotal gastrectomy indicated as the proper procedure. If operation had been postponed only a few hours, this lesion would have vanished.

To demonstrate a bleeding point, the specimen was cut in two directions and then serial sections were made. Seventy-one sec-

tions were stained. The most revealing of these are Figures 2, 3, and 4. The description of the specimen was: The section presents a segment of gastric mucosa and submucosa. There is a small defect within the mucosa

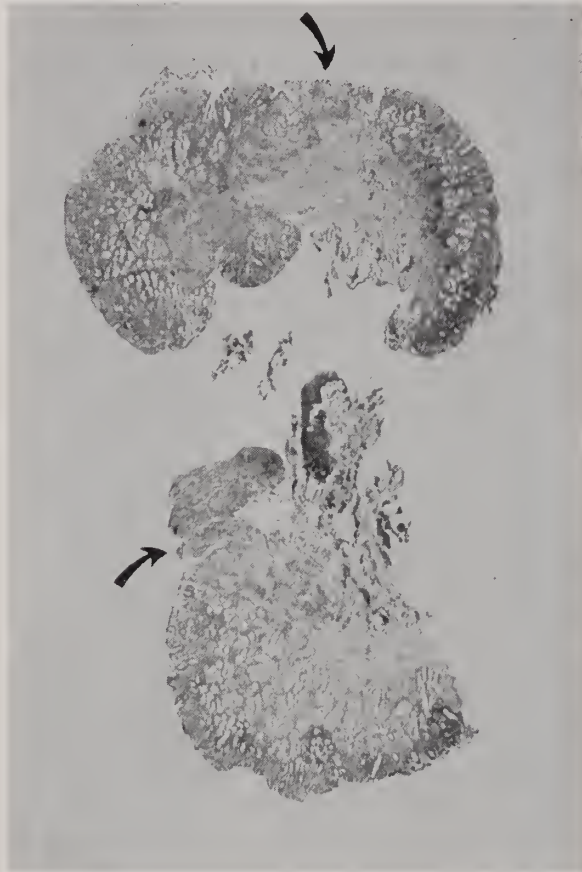


Fig. 2. The bleeding lesion in Case 2 X 40. The lesion occupies less than $\frac{1}{4}$ of the whole specimen which measured only 3 mm. The break in the epithelial surface can be seen in both sections. The microaneurysm was found by the serial section technic.

with loose connective tissue protruding from it. A small coiled artery is seen in the base beneath the mucosal defect. It is surrounded by a focal area of hemorrhage. The entire defect is approximately the size of the diameter of a high power field.

Delaney, discussing postoperative hemorrhagic gastritis which infrequently follows other extensive procedures, presents nine cases with pathology similar to this one. In addition there was extravasation not only through the defect in the mucosa but also throughout the intact submucosa and muscularis. He did not demonstrate a microaneurysm at the

bottom of the defect. Two cases were closed when the character of the lesion was determined and were successfully treated with steroids as the hormone. He advances the hypothesis, admittedly without any evi-

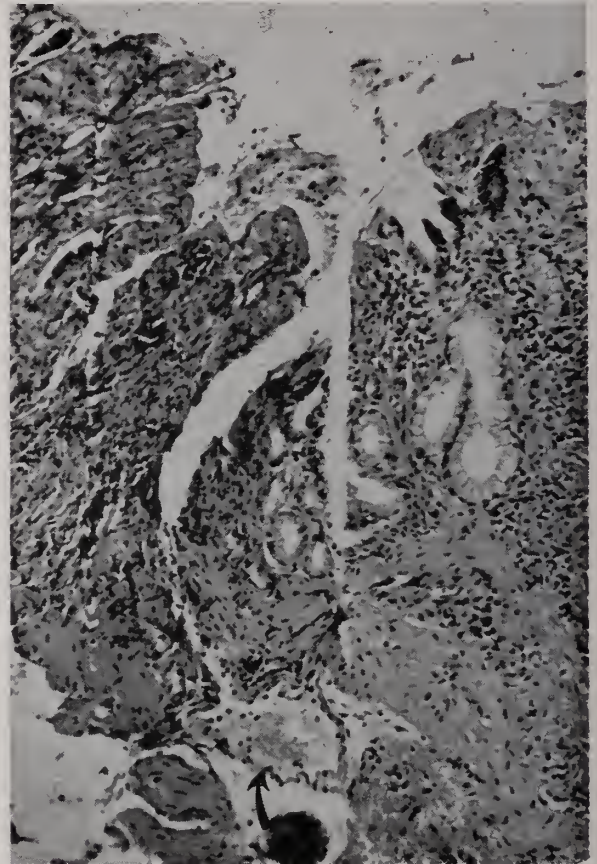


Fig. 3. Arrow points to the microaneurysm at the bottom of the split in the mucosa of the lower section of fig. 2. X 160. The wall is intact except in one place where blood can be seen streaming through the split.

dence, that the pathologic picture suggests that postoperative hemorrhagic gastritis is a vascular disorder, possibly a localized allergic purpura. That suggestion may not apply to the case described here because in this instance the hemorrhage was a primary condition without previous surgery. In either event, the disease is systemic in origin and must be blood born.

Comment

Unlike other diseases, the lesions of Spontaneous Hemorrhage are considered to be the disease itself. Thus a bleeding peptic ulcer is believed to be the result of erosion of the

ulcer into a vessel, ruptured berry aneurysms are held to be congenital and bleed when their walls will no longer retain the intraluminal pressure, bleeding cerebral angiomas are believed to be tumors, delayed posttonsillectomy and similar hemorrhages are precipitated because of sloughs or infection and uncomplicated internal hemorrhoids bleed because of hard stools, constipation or long standing. The likelihood that a circulating

cated bleeding internal hemorrhoids are varicosities at the distal end of the gastrointestinal tract. The theory that Spontaneous Hemorrhage is a clinical entity in itself contradicts the popular belief that the lesion is actually the reason for bleeding. Instead it considers the lesion as only the source of bleeding and a hormonal imbalance, with a circulating vascular toxin, as the true etiology of the hemorrhage. If these analogies

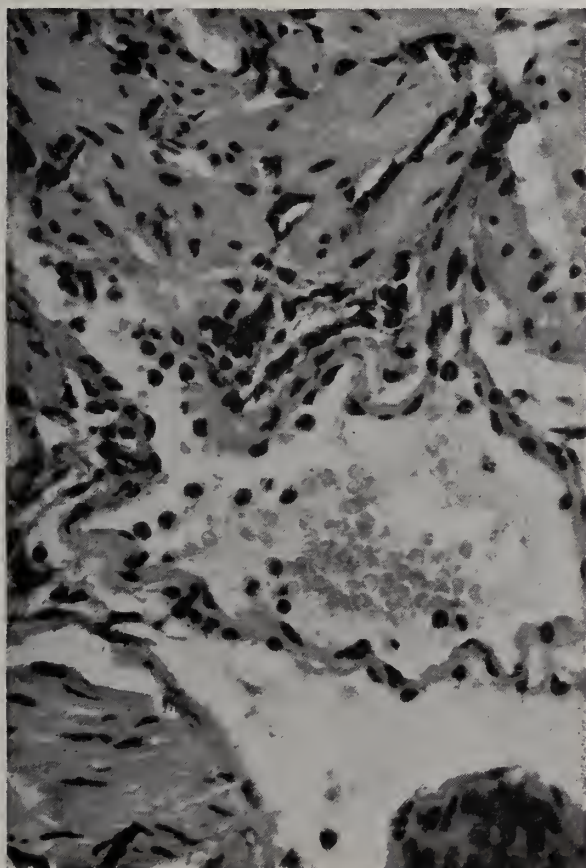


Fig. 4. The microaneurysm of Case 2 X 400. Note the intact branch at the right and the break in the wall at the left leading to the mucosal split.

hemorrhagic agent can create these lesions would be more seriously entertained if attention were paid to the differences in the pathology of bleeding, inflammatory and perforating peptic ulcers, the resemblance between berry aneurysms and the sacculations of varicose veins, the similarities of cerebral angiomas and the larger skin spiders, the regularity of the five to seven day interval with which delayed hemorrhages occur after operation or injury or that uncompli-

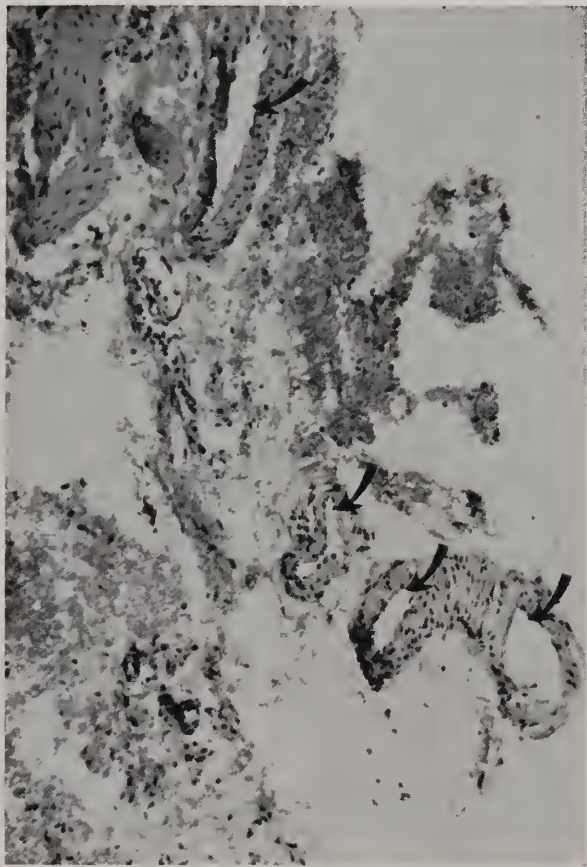


Fig. 5. Arterioles at the base of the bleeding lesion of case 2 X 160. As I have pointed out in another publication, these lesions are primarily intended for bleeding. Although the bleeding had stopped, neither a thrombus nor endothelial hypertrophy obstructs the lumen of the supplying vessels. Furthermore, there is no reaction in either the submucosa or other layers of the stomach wall by which the lesion can be recognized without entering the lumen. Had the operation been postponed a few hours, this ulcer would have disappeared.

are at all tenable, then this disease must be blood born.

A tabulation of the diseases with which bleeding is associated becomes a bewildering array of conditions that seem entirely unrelated to each other except in one respect,

bleeding is associated with them. Often a fatal outcome is the result of an exsanguinating hemorrhage even though the original disease had no hemorrhagic aspects. The cause may lie in the fact that so many diseases are debilitating and asthenic in nature, especially if their course is prolonged. Regardless of their character, other degenerative factors than those intimately connected with the disease itself come into play. The one most prominent and easily recognizable relates to the general metabolism and results, among other changes, in loss of weight; and the second most common systemic effect is anemia. A third, psychic changes are usually transient but can be permanent. But other systemic effects are not so conspicuous or easily recognizable and among them is the deterioration of the endocrine system. An imbalance in this system can be the cause of bleeding during the course of many diseases in the same manner as the normal fluctuations during the menstrual cycle can precipitate the bleeding phase.

Bleeding in the gastrointestinal tract must come from somewhere and it is inconceivable that so much blood can escape so suddenly by diapedesis, even when a surface is bleeding as in the diffuse erosive diseases such as esophagitis and gastritis. While it may appear that a surface is bleeding, actually the blood is escaping from multiple minute apertures of microaneurysms beneath invisible interruptions in the mucous membrane. These interruptions are not true ulcers but merely pathways eroded by the aneurysms for the release of blood. The diffuse bleeding diseases of the gastrointestinal tract must involve thousands of these tiny ulcers and they remind one, when seen gastroscopically, of the surges of color in the gastric mucosa during emotional changes. Both the emotional changes and the less temporary vascular changes are the result of hormonal and neurogenic stimuli. The single large bleeding vessel which also has undergone aneurysmic dilatation undoubtedly has the same origin.

The development of bleeding aneurysms,

regardless of their size or transience, is little understood but that they play a vital part in the release of blood cannot be denied. Bleeding aneurysms that are almost microscopic in size have long been known but are not labelled as such. The segments of vessels in the stomach, even though they are connected with an ulcer, those in the brain and even the sacculations of varicosities in the legs which rupture without trauma and bleed so freely are in reality aneurysms.

The hemorrhages of diabetic retinitis, of thrombocytopenic purpura, around the hair follicles of the legs in scurvy and the vascularization processes in the intima of arteries are all the result of the rupture of microaneurysms of capillaries. As Turner and Bowers²⁴ point out, progress in understanding the role of minute vessels, arterioles, capillaries, venules and arterio-venous anastomoses in disease states has been slow. Yet these small vessels may be of extreme importance in the pathogenesis of a progressive disease, which, like a cerebral or coronary thrombosis, can end in a sudden catastrophe without any indication at all that this lethal process is going on.

Microaneurysms and aneurysms that are not traumatic must originate from an attack by some element of a disease upon a sharply circumscribed segment of a vessel wall. What determines the point of attack is not known, yet certain diseases have a predilection for some vessels in preference to others. The aneurysms of syphilis and tuberculosis are seldom met with now. The origin of the latter, first described by Rasmussen in 1868, was ascribed to the destruction of the wall of a terminal vessel by an invading cavity. However, it is significant that clinicians of another day noticed a definite association with the menstrual cycle indicating that there are hormonal aspects to this kind of bleeding independent of any invasion of a vessel. Thus Cecil et al.²⁵ state: "In women there may be a definite relationship with menstruation, and a few have recurrent hemoptysis monthly." Acting on this as-

sumption, Shubin et al.,²⁶ Popper²⁷ and Narang,²⁸ all working in sanatoriums, gave intravenous estrogen to 74 patients with hemoptysis from pulmonary tuberculosis and succeeded in promptly arresting the bleeding of 70. Only a few needed more than one injection. Hence, these hemorrhages must have been due to an endocrine imbalance since this therapy has little effect on other kinds of bleeding.

What these hormonal and neurogenic stimuli are can only be conjectured and how they can create either the micro or larger aneurysms found at the bottom of bleeding peptic ulcers other than by a circulating vascular toxin is far from clear. It is unlikely that the many hemorrhagic factors, accelerators, inhibitors, antagonists and neutralizers found in the blood, which seem to be multiplying with such rapidity and have become so complex that from the clinical standpoint they are so far of little value, have anything to do with the hemorrhage. Spontaneous bleeding is not a passive process that depends on the rupture of an aneurysm by the intraluminal pressure or on the attack on a blood vessel by an ulcer. It is an active process and until a bleeding factor, as reliable and accurate as blood sugar, BUN, K, and NaCl etc. determinations, is discovered it is unlikely that an incipient bleeding state can be detected before the hemorrhage begins. This process is entirely different from surgical or traumatic hemorrhage, but is now treated as if it were.

Nor does coagulation play a significant role in stopping the bleeding. Coagulation and hemostasis are not synonymous. Just as the bleeding phase of the menstrual cycle is under hormonal control, experience indicates that spontaneous bleeding is also under this same systemic control because so many of these hemorrhages are arrested without any treatment. The importance of coagulation in halting hemorrhages of any kind has been largely exaggerated. Certainly it is no unusual experience to find the nose full of clots with blood flowing freely around them and

in functional uterine bleeding one of the chief complaints is the large clots that are so frequently passed. The importance of coagulation cannot be denied but it seems that clinically the clot seals the vessel after the vessel itself has either partially or completely arrested the hemorrhage by constriction, retraction or adhesion of its endothelial surfaces. That the success of the many factors involving clotting depends upon the action of the vessel wall can be easily perceived by realizing that regardless of what these factors are, they are washed away if the vessel does not take an extremely active part in retarding the bleeding.

Scant attention has been given another salient factor which promotes hemostasis. This factor is a hyperplastic process of the intima in the vessels and capillaries around and under bleeding peptic ulcers which ends in their occlusion and arrests or prevents the bleeding. It is depicted in the microphotographs of a bleeding lesion (Figs. 6 & 7) taken from a 53 year old man who was admitted to the hospital after 7 days of melena accompanied by some bright red blood evidently from hemorrhoids. When 20 years old he had had an operation for perforated duodenal ulcer and was free of discomfort for about a year. Since then he has had numerous bouts of pain and bleeding but in recent months discomfort had been almost continuous and melena frequent. (Case 3)

The hemoglobin was 14 gms. per 100 c.c. but it soon dwindled to 9.8 gms. despite the administration of antacid therapy, intravenous estrogen and several transfusions although the melena apparently ceased. In view of his long history subtotal gastrectomy was done. Scarring and induration were found in the duodenum. Another ulcer about 2 mm. in diameter and of approximately the same depth on the gastric side of the pylorus was removed along with nearly 60% of the stomach. The duodenal ulcer was not disturbed. The gastric ulcer was considered to be the bleeding lesion although it was not active at the time. Serial sections of this lesion were prepared for the purpose



Fig. 6. Gastric ulcer of the 53 year old man who had had numerous bouts of pain and bleeding (X 70, V.G. stain). He also had a duodenal ulcer but this one was thought to be the bleeding lesion. This ulcer is just about 2 mm. in diameter. The vessel at the distal end is protected from invasion by endothelial hyperplasia, intimal fibrosis and mucin which forms the reticulo-endothelial syncytium that partly occupies the lumen. If this vessel were invaded it could bleed but little. (Case 3).

Insert shows the vessel wall in more detail. Note the rings which resemble the duplication of the elastica in an atheromatous vessel. These rings indicate repeated episodes of bleeding caused by the attack on the vascular wall by the toxin I have postulated and represent the reaction of the vessel to the injury. In due course the lumen will become completely occluded. A new bleeding site in the form of another minute ulcer will then be prepared when the bleeding state returns. Vessels elsewhere in the stomach were not affected.

of studying the vascular changes. These changes are described in the legends.

As I have previously pointed out, one of the principal differences between bleeding and inflammatory or perforating ulcer is the vascular reaction in the bases of these lesions. In the former the vessels are wide open while those of the latter are occluded by a syncytial mass of reticulo-endothelial cells separated sometimes by a surprising amount of mucin. A similar reaction can be found in vessels of the gallbladder, the uterus, the

colon and other organs which have been the site of prolonged but not necessarily a bacterial disease.

This reaction which is neither arteriosclerosis or atherosclerosis can be seen easily in the sections presented here. Its relation to all the known factors involved in hemostasis such as constriction, retraction, and adhesion of the vessel walls, the time required for its development, its association with either endogenous or exogenous estrogen or other hormones and its connection with the coagulation mechanism can only be the subject of endless speculation and conjecture at this time.

It is reasonable to presume that this reaction has an important role in arresting or preventing bleeding. When bleeding recurs it must take place in another area in which this process has not yet begun since it is unlikely that these vessels recanalize. Clinical observation is in accord with this reasoning. It is a common experience for bleeding to recur even after the lesion has been surgically and therefore unquestionably eliminated. Arresting the bleeding by any device means only that the immediate hemorrhagic threat has been turned aside; the disease is still present and the renewal of the bleeding state with its accompanying phenomena will precipitate another hemorrhagic episode.

Clinical Application

Hormonal therapy is a valuable clinical tool especially when one is confronted with a gastrointestinal hemorrhage of unknown origin. An example is the case of an 80 year old man who began to bleed on a train when it was about 50 miles from this city. He was brought to the hospital from the station by ambulance. The attending physician made the following note:

This white male was admitted to the hospital in an extremely critical condition. There was considerable difficulty in communicating with the patient. He was sweating profusely and, as he was being examined, he vomited a considerable quantity of blood, between 1 and 2 pints. The patient gave a history of several such attacks and later, after talking to him at some length, it

was suspected that he had been bleeding from a hiatus hernia. He said he had hypertension and had been told he had the hernia. From the medication he had been taking, it was obvious he had emphysema and probably bronchitis.

In addition to the sweating and cold skin, he was breathing rapidly and was considered to be in shock. The blood pressure was 108/74 and the hemoglobin was 11 gms. per 100 cc. of blood. This measurement was disregarded because not enough time had elapsed for blood dilution.

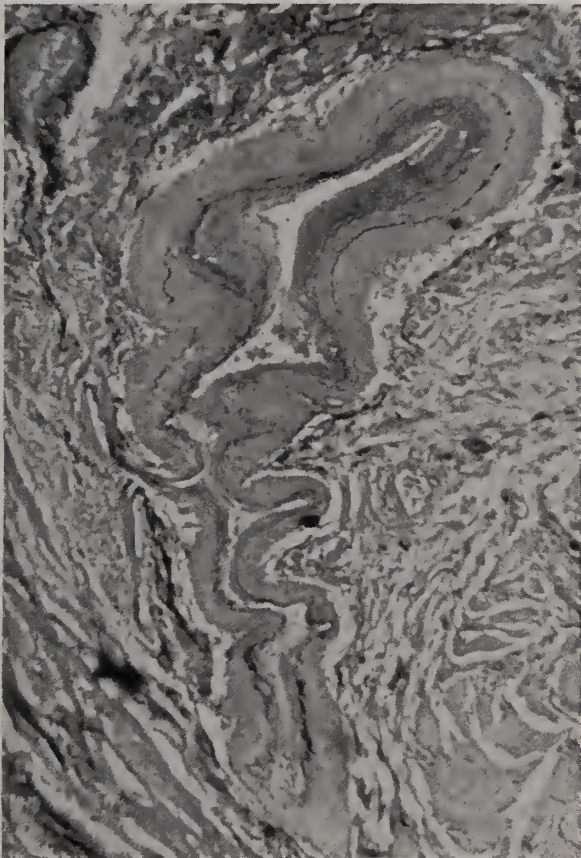


Fig. 7. Section through a spiral arteriole in the base of the same ulcer (X 200). The elastica and intima are clearly marked and the duplication of the elastica can be easily seen at the wide proximal end. The features of the progressive occlusion of this vessel are also demonstrated.

Twenty mg. of intravenous estrogen was given in the emergency room followed by another 20 mg. mixed with a unit of blood and he was put in an oxygen tent. Within an hour his blood pressure rose, the dyspnea improved and the skin became warm and dry. As the chart (fig. 8)

shows, the elevation of the pulse rate persisted during the first 36 hours. For this reason I considered him to be still in the bleeding state and a potential bleeder. Therefore, the doses of intravenous estrogen were repeated although there was no actual bleeding. He stayed in the oxygen tent only a few hours and was surprised and delighted that this bleeding episode ended much more quickly than the previous ones for which,

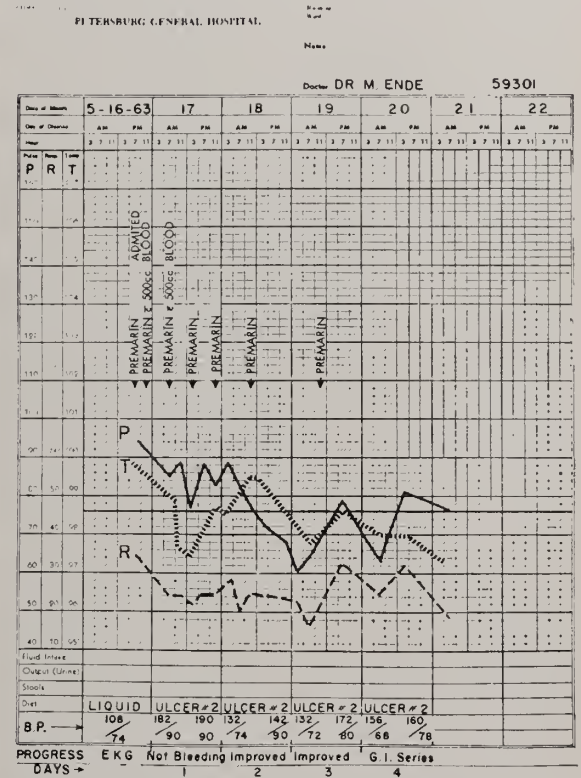


Fig. 8. Chart of 80 year old patient who had sudden hemoptysis of unknown origin. The pulse rate remained elevated from the time of admission until the second day. Then the rate declined during that day and assumed a lower level. This pattern has occurred with striking frequency in other bleeding cases. In my opinion it marks the end of the bleeding state and the disappearance or change in character of the bleeding lesion. While the bleeding state is present, recurrence of the hemorrhage is probable and is the reason why bleeding stops and then starts again in so many cases of Spontaneous Hemorrhage.

from what I could gather, he received similar treatment with the exception of the "shots".

Early on the second day the pulse slowed and then its rate declined rapidly. This decline indicated the end of the bleeding state and the disappearance of the bleeding

lesion wherever it was. It was also the signal for discontinuing the estrogen. He received only 2 units of blood. Studies failed to reveal the source of the hemorrhage and disclosed that he did not have a hiatus hernia. He was discharged on the fifth day and resumed his journey.

It is likely that other hormones such as the corticosteroids will enhance the action of intravenous estrogen. This action is not upon the coagulating mechanism but upon the vessels themselves as Schiff and Burn²⁹ demonstrated grossly, clinically and experimentally. Intravenous estrogen must be given with some understanding of the theory of Spontaneous Hemorrhage, the objectives to be attained and the ability to evaluate its effects not only from the standpoint of the hemorrhage but also upon the patient as a whole. Its limitations when large arteries are bleeding and in the presence of the Mallory-Weiss syndrome and other pathologic conditions must be comprehended. Thus hormonal therapy can add a new dimension to the management of gastrointestinal hemorrhage.

This therapy is not intended for all bleeding occasions and should not be relied on to arrest surgical or traumatic hemorrhage although there have been such occasions when it has been of unexpected value. It can be used with impunity since no untoward reactions ever have been reported. It will reduce or prevent bleeding during operations on the elderly in whom the endocrine balance can be presumed to be impaired providing it is given in sufficient quantity over a few days in advance and not just before the procedure. The most common of these operations are prostatectomy, vaginal plastic procedures and removal of cataracts. It can also be used prophylactically for the many who fulfill the criteria established by Diamond and Porter that mark them as bleeders but do not have one of the so-called hemorrhagic disorders which are comparatively rare. The use of intravenous estrogen for con-

trolling bleeding has been described, as far as it has been developed, in other publications.

Summary

Gastrointestinal bleeding of obscure origin and from uncertain sources is extremely common and can happen anywhere from the esophagus to the rectum. The lesions from which these hemorrhages occur are characteristic of other lesions of Spontaneous Hemorrhage in that they have no permanence. To identify them, they must be caught in the act. Gastrointestinal lesions, like those in the nose, appear and disappear. The bleeding lesion is really an aneurysm and its aperture can be in a vessel of any size from the microaneurysm of a capillary to that of a large artery. The severity of the hemorrhage does not depend on the size of the lesion. Three cases are presented to demonstrate obscure lesions.

The gastrointestinal lesions of Spontaneous Hemorrhage are improperly considered to be the disease itself. Instead, this kind of bleeding arises from a systemic disease which is hormonal in origin. This disease, which has a higher mortality and morbidity than any other human affliction, is a clinical entity in itself and its lesions are created for the purpose of bleeding. Bleeding peptic ulcer and peptic ulcer are not varieties of the same disease and the epithelial defect of a bleeding peptic ulcer is not a true ulcer.

The theory has been advanced that in this disease, the lesions arise from the capacity of the organism to prepare a bleeding state, create a lesion for bleeding and then to dissipate this whole process without a trace unless the lesion happens to be in a structure from which the blood cannot escape. The lesions come and go during the endocrine changes accompanying the rise and fall of the bleeding state. The blood is essentially normal and there is no abnormality of the coagulation mechanism or the hemorrhagic factors as far as these are known now.

The estrogens used in this study were Premarin and Intravenous Premarin, Ayerst Laboratories, N. Y.

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A Method of Staffing a Community Hospital Emergency Department

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The Alexandria Hospital plan has successfully solved the difficult problem of staffing a community hospital emergency department.

TO THE COMMUNITY, the hospital emergency service is essential. It is no longer restricted to accident cases and the illnesses which doctors consider emergencies. In the words of the American College of Surgeons Committee on Trauma, "... the public has come to look upon the emergency department as the community medical center where any may apply, with any complaint, at any hour of the day or night, and expect prompt and courteous attention as his due. This concept must be accepted as a community obligation by governing boards, hospital administrators, and the profession." *

The past decade has seen a four to six-fold increase in the demand for emergency coverage which is unrelated to population growth** and promises to continue into the future until facilities for training of future physicians are significantly augmented.

Everyone should have his own physician who is his permanent medical advisor. He

*American College of Surgeons, "A Model of a Hospital Emergency Department," a report prepared by the Committee on Trauma, Chicago, 1962.

**E. C. Shortliffe, T. S. Hamilton, M.D., and E. S. Noroian, "The Emergency Room and the Changing Pattern of Medical Care," N. E. J. M. Vol. CCLVIII, No. 1, (Jan. 1958).

derives an additional benefit however if he and his doctor know that he can receive attention in his community in a reliable and ethical facility that is always available.

Traditionally the emergency room was staffed with nurses and house staff doctors with the backing of attending staff. As attrition of house staffs has developed in the small community hospitals, effort was made to supplant their services. One solution has been to call on the medical staff to serve in rotation. This has met with less than enthusiasm by doctors who already put in more than 60 hours a week in their practices. The Alexandria Hospital of 288 beds in a community of 100,000 had for many years an emergency department served by interns and residents. It is a community non-profit hospital not owned by the City of Alexandria. Since there is no city hospital, Alexandria Hospital serves indigent and private patients alike. Over the past decade emergency outpatient visits had an average annual growth of 3%, reaching 20,000 in 1961.

Alexandria Hospital Plan

To meet the need for the emergency service under current concepts, a new plan was developed. Four members of the medical staff actively engaged in private practice agreed with their medical colleagues to relinquish their practices and become full-time emergency department physicians. Each doctor successfully sought a replacement to fill the void left by his leaving practice.

From the plan's inception it was obvious that the rights of the community's prac-

ticing physicians must be protected from unfair exploitation of the hospital undertaking. This was necessary for ethical considerations and for the very practical reason that the plan relies on fellow members of the staff for consultative services and for follow-up care. To formalize our implicit contract with our colleagues these rules were set down:

1. Emergency department physicians will see every patient who presents himself, except that—

- A. Patients having private physicians will be treated only at the request of the patient's doctor. (The nursing staff makes a telephone search for the doctor.)

- B. No continuing course of therapy will be undertaken.

2. Emergency physicians have the right and obligation to call on consultants of the staff when this is in the patient's best interest. A roster is provided monthly for the various services indicating available specialists.

3. These arrangements will in no way alter the traditional right of staff members to treat their own patients in the emergency department.

4. The emergency department physicians will not engage in private practice except within the department.

Charges

The emergency physicians charge for their services on a scale in keeping with those of the area and with the Blue Shield schedule. The hospital also charges for its service. The two charges are presented for payment or billing and the hospital does the collecting as the doctor's agent. The dual charge acts as a deterrent to excessive use of the facility or use of the service in preference to a doctors' office. Indigent patients are charged for informational purposes only and are not billed.

The doctors' anticipated income was calculated to replace that earned in private practice. The professional care of indigent patients is paid for by a municipal appropriation, private patients pay their own fee for service. The hospital provides nursing staff, cashiers, bookkeepers and insurance clerks.

15 months' experience

The plan has now been in effect for two years. The doctors of the emergency department continue to enjoy the cordial relations with their confreres they had in private practice. The staff members of the several services have been most helpful in their essential backing of the emergency department. The doctors of the community have learned that the service can help them with their patients during busy office hours, evenings off, or nights, with the assurance that their own doctor-patient relationship will be preserved. The physicians' telephone answering service (which also answers for the medical society) is not at loss to make a referral at odd hours. The 12-month patient load has increased 14% over the previous year. 1.3% of polled patients found the charges excessive.

To implement such a scheme there must be:

1. A congenial medical community in which busy members do not feel a threat from such a plan.

2. Ample support from the several specialties and from family doctors.

3. A municipal government willing to assume its responsibility for the medical care of indigent patients.

4. A hospital board alert to medical needs and trends and willing to participate in a new plan.

5. A team of experienced physicians who will surrender private practice to man an emergency service.

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Educational Programs in Nursing and Related Career Opportunities

The members of the AMA Committee on Nursing believe it is fundamental to an understanding of nursing and its problems that physicians have some knowledge of the differences among educational programs in nursing and related career opportunities. Further, the members believe that such an understanding is a vital link in strengthening the relationships between the medical and nursing professions. Therefore the following report has been prepared to provide an overview of the diversification in nursing education.

There are presently wide varieties of educational programs in nursing from which a high school student can choose if she desires to become a nurse. There is also more than one avenue to follow if the professional student wishes to obtain a baccalaureate degree. The educational programs in higher education also vary, dependent on the objectives and the philosophy of the faculty and the university of which the nursing school is an integral part.

The table represents the types of programs available to potential or graduate nurses, or both, the educational facility in which the

(Continued on page 529)

Data on Programs in Nursing Education

Type of Program	Length of Program	Minimal Educational Requirements	Educational Setting	Administrative Control of School	Range or Average Tuition	Financial Responsibility	Certificate or Degree Conferred	Position for Which Eligible
Practical nurse	Approx 1 calendar yr	2 or more yr of high school, dependent on school requirements	Vocational high school, hospital, or junior college	Local school board or board of trustees of hospital	Free; up to \$800	Usually school subsidized; student purchases uniforms, books, etc.	Diploma or certificate—eligible to take examination for licensure as LPN	Bedside nursing under supervision of physician or professional nurse
Diploma (hospital)	27-36 mo	High school diploma	Hospital	Board of trustees of hospital, or independently incorporated yet associated with a particular hospital	\$106 to \$2,207 for 3 yr (median school \$826)	Student tuition, hospital and private funds	Diploma—eligible to take examination for licensure as RN	Bedside nursing
Associate degree	2 academic to 2 calendar yr	High school diploma	Community, or junior college	Local school board, or board of trustees of college	Minimal in state or community jr. col. up to \$2,000 per yr in private colleges	Student tuition, state or community sponsorship, and private funds	*Associate degree—eligible to take examination for licensure as RN	Bedside nursing
Basic or generic baccalaureate	4 academic or 4 calendar yr. A few schools offer 5-yr courses	High school diploma	College or university	College or university	Varies in state university; up to \$2,000 or more per yr in private universities	Student tuition and college or university funds	Baccalaureate degree—eligible to take examination for licensure as RN	Bedside nursing, public health nursing (candidate for head nursing)
Baccalaureate for RN	2½-3 academic yr or more	High school diploma	College or university	College or university	Varies in state university; up to \$2,000 or more per yr in private universities	Student tuition and college or university funds	Baccalaureate degree (BS, BN, etc.)	Bedside nursing, public health nursing (candidate for head nursing)
Master's	1-2 yr	Baccalaureate degree	College or university	College or university	From \$2,200 to \$3,500 per yr	Student tuition (traineeships avail. to students from USPHS and others)	Master's degree (MS, MA, MEd, MPH)	Administrator, educator, clinical specialist
Doctoral	Varies with choice of major area; approx 3 yr or more	Baccalaureate and master's degree	College or university	College or university	From \$2,200 to \$3,500 per yr	Student tuition (research fellowships avail. to students from USPHS and others)	Doctoral degree in nursing or related field	Administrator, educator, investigator, and others

*Some states do not permit graduates of these schools to qualify for RN licensure and practice.

The Uncomfortable Scratchy Throat

Believing that we are witnessing the success and value of the dissemination of knowledge that persistent "hoarseness" is an early warning sound of cancer of the larynx, we should like to take part in another crusade by emphasizing the symptoms and signs of cancer in a different location, more difficult for early diagnosis, that is, of the hypopharynx, epiglottis, base of the tongue, and tonsils. These lesions usually begin as unilateral ones and produce few early, unmistakable indications of impending serious trouble.

We shall present a hypothetical but what we believe may be a typical case in question. Our patient will be a male, about 55 years of age, who has been a cigarette smoker of years duration and uses beverage alcohol rather constantly but not necessarily in excess at any particular time, a frequent social drinker, so to speak. He will be bothered by a unilateral scratchy sore throat and increased secretions. This sore throat will be at first more annoying than uncomfortable or actually painful. It will continue for several weeks, during which time the patient will spasmodically treat himself with bargain counter and television remedies, such as troches, lozenges, sprays, etc., and in addition will voluntarily curb the use of tobacco but not alcohol. This will result in a history of temporary relief; but the inevitable return, with increasing severity of the symptoms and signs, will be responsible for a visit to a physician interested in general practice or to a throat specialist. In our experience, from the histories obtained, the results of this initial visit rarely produce a correct diagnosis. The patient invariably receives some type

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of antimicrobial drug, with somewhat vague (if any) instructions as to what to do in the event that this is not successful. (This is now the time for thorough mirror examination of the focal point of complaint in the nasopharynx, oropharynx, and hypopharynx, if need be after reducing the gag reflex with topical anesthesia.) Again, for some reason or other, this therapy, according to the histories, results in temporary relief, and the patient ceases to worry. The symptoms return, and the patient again seeks medical consultation. If the interrogator questions him carefully, it will be noted that he often has a sense of impending serious trouble, and this may frequently be responsible for delay in soliciting medical advice another time. He is fearful of the truth. His use of alcohol increases, the throat has now become constantly and definitely uncomfortable, and he is irritable and resentful when his relatives urge him to seek additional medical consultation. He will have developed pain on swallowing and also referred to the ear. Finally, after a lapse of some weeks, he requests medical help of his own volition, or is taken to a doctor by the wife or relatives. Cigarette smoking continues, and the intake of alcohol has increased (a method of obtaining relief from constant worry). The discomfort in the throat is persistent and painful enough to interfere with rest. The second experience with a doctor, if both are fortunate, may result in a definitive diagnosis, directly or indirectly. However, again in some cases, the antimicrobial therapy may be repeated, followed by the same sequelae of events with some modification, due to the increasing severity of the disorder, as previously mentioned.

Finally, the serious nature of the cause for the, initially, unilateral scratchy sore throat is revealed. Treatment now, in an effort to

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remedy the situation, is of major proportions, with the possibility of cancer cure being greatly reduced by the delay of weeks to months in establishing the correct diagnosis.

We believe, in the vast majority of cases, that when a patient is bothered by a fairly constant, unilateral, scratchy, sore throat, if



Fig. 1. Within the circle, an ulcerative carcinoma of the pyriform sinus, the usual advanced lesion when first seen, requiring laryngectomy and cervical node resection.

a thorough examination is accomplished, the true condition may be readily recognized and the diagnosis established by biopsy, as this symptom or sign is not really an early one. Truly early carcinomas of this area do not give symptoms or signs that can be rec-

ognized as being unusual by the patient. It behooves all of us to treat this symptom and sign with the utmost respect in the majority of the patients encountered. It is true that in erring on the side of safety, one will exaggerate the importance of a relatively insignificant and common complaint in certain instances; but ultimately, in the over-all

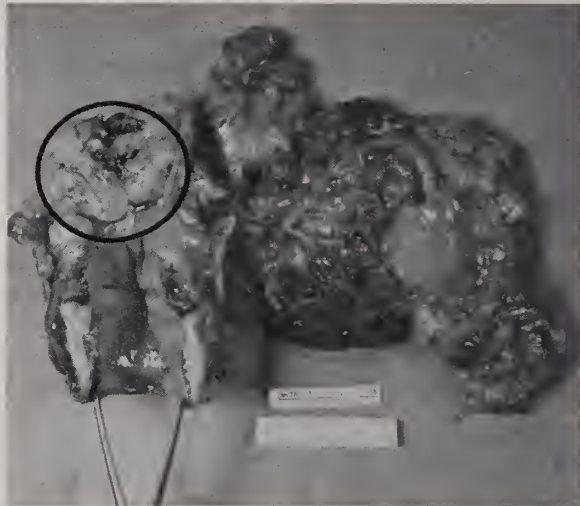


Fig. 2. Within the circle, an exophytic carcinoma of the epiglottis, the usual advanced lesion when first seen, requiring resection of the larynx and cervical nodes of each side.

picture, an occasional life will be saved, and what can be more gratifying than to do so by the simple measure of being alert and thorough.

In summary, consider the unilateral scratchy sore throat as the majority of physicians and many lay people are considering the import of persistent hoarseness.

MACK I. SHANHOLTZ, M.D.

State Health Commissioner of Virginia

Pharmacological Adjuncts in the Comprehensive Care and Rehabilitation of Alcoholics

Alcoholics constitute a mixed group of ill people suffering from a complex of psychological, social and metabolic disturbances or maladaptations. Although the symptom of pathological use of alcohol is common to all of them, they exhibit varied patterns of drinking, loss of control and changes in tolerance. An important objective of therapeutic research and an essential requirement of successful therapy is to make a careful diagnostic study to categorize these patients according to the disturbances they exhibit and the patterns of their alcoholism so as to provide data for exploring etiological factors and planning therapy. A problem still facing the therapist stems from his inability to plan therapy based upon a confident theory of causation. An initial task in the care of the alcoholic is to bring the patient to therapy and help him to continue in a program of rehabilitation. This is often fraught with difficulty, particularly because alcoholism overtakes its victims subtly and often imperceptibly. Without understanding the reason, the alcoholic may find himself involved in the symptoms of uncontrolled and harmful alcohol use. It is not surprising, therefore, that he frequently resorts to rationalizations and denial of the reality of his problems. Even when denial is no longer possible, he may misinterpret his symptoms and misconstrue his course of action. He may seek to control alcohol use by enforcement of self-discipline and may use help from others only for recovery from the pangs of a drinking binge.

Nevertheless, public attitudes are gradually changing and a climate of opinion is developing which permits a larger and larger

number of alcoholics to accept their condition and seek help voluntarily for themselves and for their family. The alcoholic is a sick person usually living in a family setting which is also disturbed. Some members of the family may be actually more sick than the alcoholic himself, either because of or from causes prior to the patient's alcoholism. The patient's progress in recovery may also create new disturbances in the family because of necessary changes in family interpersonal relationships. Thus, a recovering alcoholic may not be an acceptable partner to a spouse with a need to dominate and control. Family members have to learn to understand, as well as possible, the nature of the patient's illness and their own problems so that there may be created an environment within the family that is therapeutic to all.

Many general practitioners as well as non-psychiatric specialists have found that the care of alcoholics and their families can be quite successful and rewarding, especially if the therapist makes use of community resources and does not try to carry the whole therapeutic load himself. He is wise to bring in the help of social agencies, special clinics, psychiatric consultation, the help of the clergyman and the cooperation of the family and the patient's employer, where this is indicated. All of this should be done, as far as possible, with the full cooperation of the patient himself.

Most alcoholics seek help with different degrees of "voluntariness". Motivation for rehabilitation as distinct from simply recovery from a current binge can be strengthened if the therapist stresses to the family and to the patient that therapy, to be successful, must be planned and continuing. Episodic, intermittent treatment based only on carrying the patient through drinking

sprees cannot but fail. Alcoholic patients can be unwanted patients in hospitals and doctors' offices partly because the emphasis in treatment has too often been simply upon symptomatic relief. As long as help for the alcoholic is limited to periodic management of his acute alcoholism whether in the hospital, the office or through home visits, with no ongoing rehabilitation program, it is unlikely that much progress will be made.

It is fortunate for the patient if he can be encouraged to seek help before irreversible and serious brain damage has supervened. In these relatively early cases, a short period of hospitalization of a week or two can be quite helpful in initiating a planned program of ongoing treatment, in carrying out a comprehensive diagnostic study and in initiating group and individual therapy. The purpose of such hospitalization as part of a total program of rehabilitation is to carry out a comprehensive diagnostic study and to make a pertinent social and domestic appraisal of the patient and his family. These studies should be conducted within a controlled hospital environment that is suitably supportive and permits the patient to work out with his therapeutic team an individualized plan of long-term follow-up either in an outpatient clinic or with a general practitioner or specialist, utilizing the community resources available and helpful to him. Sometimes hospital care for the alcoholic has to be more prolonged and some alcoholic patients suitably remain in hospital for a month or more.

Whatever the length of hospitalization and the stated purposes, which vary, it is clear that hospitalization alone cannot do more than initiate rehabilitative therapy. Whether for a short or long stay, the hospitalized patient ideally finds himself in a carefully planned therapeutic milieu in which he may examine and explore his own psychologic and situational problems and begin to form wholesome relationships and experiment with a new way of life. Although care is rightly given to the management of acute alcoholic intoxication and

withdrawal from alcohol, emphasis should also be placed upon a long-term rehabilitation from the beginning of the outpatient phase of treatment. The approach to the patient should be to avoid excessive, exclusive or disproportionate concentration upon an immediate or recent episode of drinking. Everything should be done to help the patient recover from the current drinking situation as soon as possible and no element of punitiveness should allow the withdrawal period to be any more painful or unpleasant than it need be. Nevertheless, it should be made clear from the start that withdrawal from the alcohol and its immediate effects is not the long-term objective of therapy and that recovery from the immediate alcoholic situation does not necessarily mean that progress has been made in the basic problem.

A primary function of the therapeutic environment in the hospital is to give the patient a significant experience of the reality of his own corporate membership in a body made up of people who are like him and yet are different. Within the group therapy sessions he can experience, often for the first time, the supporting, strengthening power of the whole group of patients and staff and may come to realize that he need never again attempt to function in lonely isolation. The strong organism of the hospital group can represent to him a model upon which to build his concept of his membership within his family group and his community. The efforts of a therapeutic team should be directed towards achieving such understanding for the patient as well as for his family members and, wherever the patient and other members of the family are willing and able, the latter should be brought into the therapeutic situation as indicated.

Rehabilitation is a long-term process. While abstinence is an essential daily objective for an alcoholic, this does not mean the end of his problems. Through his sobriety an alcoholic may be helped to recognize that as a sober member of his family and his community he may have to face and deal with more problems than he did while drunk.

Formal therapy, therefore, should continue beyond the period of initiation of abstinence and in practice may last for a number of years. Many patients maintain regular contact for many years. Abstinence becomes a sign of recovery and one of its expressions, just as uncontrolled drinking is correctly seen as a symptom of an underlying disorder. The long road of rehabilitation may be far from smooth and may be punctuated by many crises in which an alcoholic slip may be only one variety. As the alcoholic maintains sobriety, it often happens that otherwise sub-clinical psychologic, domestic and psychosomatic problems come to light. With skilled therapy these disturbances may be abated so that the patient may eventually lead a well-adjusted, healthy life.

It is well known that alcoholics may temporarily or even permanently transfer their addiction from alcohol to other drugs such as the barbiturates or to other modalities such as food and work. Because of this tendency, the use of pharmacologic adjuncts must be conservative and drugs used only for well-considered indications. Nonetheless, some pharmacologic adjuncts to rehabilitation have been used with beneficial results and the growing field of psychopharmacology offers considerable hope for greater success in the care of alcoholics.

Disulfiram (Antabuse) has been used to enforce motivation for abstinence and has been effective when correctly utilized. This substance given in a daily maintenance dosage of 250 mgs. is usually without any effects by itself. However, if the patient taking disulfiram drinks anything containing alcohol he experiences, within about 10 minutes, symptoms of headache, faintness, prostration, pounding heart and other acute disturbances, mainly referable to a sudden rapid drop of systemic arterial blood pressure. These symptoms of the disulfiram-alcohol reaction last for about an hour, after which the patient is left in a state of exhaustion. The certainty that he will experience this reaction can serve as a deterrent to alcohol use. Many objectives have underlain

the use of disulfiram by alcoholics. It has been thought of as a kind of "pharmacologic fence" built around the patient to prevent him from drinking. The disulfiram has been thought of by the patient as a kind of policeman or at any rate, the long arm of the therapist forbidding alcohol consumption. Some of the psychotic episodes which complicated the earlier use of disulfiram were probably due not to toxic side effects of the chemical itself but to an impossibly high barricade built around the patient to isolate him from alcohol. Such a patient was unable to bear the interdicting force of the drug anymore than he could tolerate another person, such as his doctor or his spouse, forbidding him to drink. Experience shows that the use of disulfiram is generally without value if it symbolizes imposition of a state of abstinence by the therapist, the patient's spouse or anyone other than the patient himself. Disulfiram now appears to be effective mainly if the patient himself monitors its use and if he takes it as part of his own daily acceptance of his alcoholism and his personal need for sobriety as a new way of life. Disulfiram should be made available solely for those who take it voluntarily as a means of daily reinforcement of acceptance for the need for sobriety. The patient should be asked to take the daily dose of disulfiram only after he has reaffirmed his own powerlessness over alcohol and decided that he will seek another day of sobriety. This choice means that the patient himself accepts the disulfiram which through the remainder of the 24 hours represents his own motivation. Thus, disulfiram promotes a day-to-day pattern of life punctuated by a moment of decision each day. It has been shown that with patients accepting therapy on a voluntary basis, disulfiram-treated patients show a significantly better clinical outcome over a five-year period than do controls. Disulfiram tends to be selected by those more highly motivated patients who will continue long-term therapy more faithfully.

Metabolic approaches to the treatment of

alcoholics stem from studies suggesting that genetic differences in metabolism may underlie susceptibility to alcoholism. To test this hypothesis, many have reported that rats receiving a marginal diet select high alcohol intake while those who are given high vitamin diets do not. Carefully controlled human studies in which alcoholic patients have been given a polyvitamin formula to supplement the diet over a period of two to three years have failed to show any difference between patients receiving such supplementation and control patients. Statistical analysis of such data suggests that the differences in clinical success (i.e. abstinence and family, job and social adjustment) between the group receiving the supplement and the control group can be explained by random variation. It is evident, however, on a clinical basis that patients receiving high vitamin supplements do feel better and eat better than those in the control group and subsequent experience with these formulas shows that they can be a valuable adjunct in helping outpatients cope with anorexia and excessive fatigue. No patient has ever been shown to have acquired any degree of control over the use of alcohol whether taking vitamins or not. While there are occasional papers in the literature claiming that a few patients eventually become able to drink moderately without catastrophe, such reports are still suspect and the general conclusion has been that recovery for the alcoholic can only be accomplished through a regimen of total abstinence.

Other metabolic theories of susceptibility to alcoholism include the hypothesis of individual genetic differences in enzyme activity which may affect alcohol metabolism and conceivably play a part in the etiology of alcoholism. Many studies support the hypothesis that alcoholism, while not a clear-cut, single disease entity, may be casually related in part to hormonal imbalance. Although treatment regimens have been based upon therapy with enzymes and hormones, such therapy has not been notably more successful than others.

Chlordiazepoxide (Librium) has been used not only in the management of acute intoxication and withdrawal from alcohol but also as an adjunct to long-term psychotherapy. In the acutely ill patient, chlordiazepoxide, 100 mgs. orally or intramuscularly, followed by 10 to 25 mgs. four times a day by mouth, has been notably effective in calming the agitated patient and in tranquilizing the tremulous alcoholic in the withdrawal period as well as reducing the incidence of delirium tremens. Used for periods of a year or more, chlordiazepoxide in doses of 40 to 100 mgs. a day has been associated with improved follow-up records in clinics and has been effective in abating tension, psychovisceral symptoms, sleeplessness and anxiety. With chlordiazepoxide as an adjunct to psychotherapy there may be greater willingness and ability to explore and face personality problems and life situations. Although the mechanism of the action of this psychopharmacologic agent and others similar to it is not completely understood, it appears from animal studies that chlordiazepoxide, in part at least, acts upon limbic and other higher cerebral autonomic control mechanisms, serving to block cerebrally induced visceral disturbances. Modern studies of the limbic system and related higher cortical levels have indicated complex mechanisms for the control of visceral functions by the autonomic nervous system. Stimulation of specified isocortical, paleocortical and other higher cerebral areas evokes alterations of systemic blood pressure, changes in intracardiac dynamics, modifications of peripheral circulation as well as functional and vascular changes in the kidney, gut and other organs, including the heart itself.

It appears that these cerebral autonomic control mechanisms may also be related to forms of behavior and emotional activity. Disturbance of these higher cerebral mechanisms may be a part of the underlying etiological disorders in the alcoholic. Therefore, neuropsychologic agents which can be shown to protect the autonomic nervous system from higher cerebral over-response to stress

may have a value in the long-term rehabilitation of alcoholics. Alcohol itself can be shown to be an imperfect attenuator of centrally generated autonomic disturbances and in fact under some circumstances may act to exacerbate the cortical autonomic responses. Alcohol thus appears to be a defective tranquilizing agent, especially for some individuals and under certain circumstances. On the other hand, chlordiazepoxide and certain other modern tranquil-

izing agents may protect the viscera from harmful cerebral autonomic dysfunction. Thus, a mechanism of action of such substances may be to reduce cortical autonomic overactivity and so facilitate the beneficial effects of psychotherapy and render the patient more available to psychotherapy.

EBBE C. HOFF, M.D.
Medical Director
Division of Alcohol Studies
Virginia State Department of Health

MONTHLY REPORT OF BUREAU OF COMMUNICABLE
DISEASE CONTROL

	Aug. 1963	Aug. 1962	Jan.- Aug. 1963	Jan.- Aug. 1962
Brucellosis	2	0	5	10
Diphtheria	0	0	0	8
Hepatitis	53	59	624	911
Measles	94	109	7996	9207
Meningococcal Infections	0	5	69	51
Aseptic Meningitis	4	13	21	29
Poliomyelitis	0	3	2	6
Rabies (In Animals)	9	11	136	105
Rocky Mt. Spotted Fever	13	14	33	33
Streptococcal Infections	349	276	6736	5353
Tularemia	0	1	6	12
Typhoid Fever	2	2	7	14

Who Wants the Cheapest Drug Available?

Unfortunately, in some circles trademark names are currently being categorized as undesirable, in fact, even wicked. Physicians, according to some people, should not prescribe the brand name but should merely make use of the generic or descriptive name of the drug he wishes the patient to have. This is recommended in order to allow use of the most economical drug. If such a procedure brings the patient the best drug for the purpose intended, he is a fortunate patient indeed. As a pharmacist I know that most pharmacists would prefer to dispense the best product available. Trademark names frequently help them to do this. Generic names can encourage the reverse or use of a product having the lowest price and sometimes the poorest quality. The one place where price should be of least importance is in products used for healing the sick and keeping well people well.—Robert A. Hardt, Chairman, Armour Pharmaceutical Company, in *Illinois Pharmacist*, February 1963.

Mental Health

Our Public Mental Hospitals

I would like to make a few remarks concerning our public mental hospitals and treatment of the mentally ill.

I am sure that everybody in this room is well aware of the fact that successful treatment of seriously ill mental patients has been going on in our public mental hospitals ever since their beginning well over a century ago. We have only to review the history of these institutions to recognize, that even in those days, when specific treatments were not available the hospitals were therapeutically oriented and welcomed with enthusiasm the introduction of each new treatment modality. It is true that treatment in hospital psychiatry was a relatively sterile field prior to Sakel's introduction of Insulin Coma Therapy. Those few of us who were working in hospitals at that time will well remember the upsurge of therapeutic enthusiasm which greeted Sakel's original paper on this subject. Within a brief period of time this treatment had been widely accepted and as is usual in medicine, was widely claimed as having extraordinary therapeutic value. Subsequently, ECT, psychosurgery, chemotherapy, group therapy and more recently Remotivation have been accepted with enthusiasm and wide application.

It has become a popular pose, in recent years, for many of our political, psychiatric and community leaders to depreciate the part that the public mental hospital has played in treatment and rehabilitation of the mental patient. Even in his recent message to Congress, dealing with mental health, our President has described our public mental hospitals in such a way as to give the impres-

O'NEILL, FRANCIS J., M.D., *Director, Central Islip State Hospital (N.Y.).*

Excerpts from an address to the Remotivation Workshop, University of Oklahoma, March, 1963, reprinted through the courtesy of Smith Kline and French.

Approved for publication by Commissioner, Department Mental Hygiene and Hospitals.

FRANCIS J. O'NEILL, M.D.

sion that they have always been devoid of treatment value. Perhaps over-statement is necessary to awaken the American people to the needs of the mentally ill, but having long personal experience in the field makes it necessary for me to point out that our hospitals have had tremendous therapeutic effect. They have not been the "warehouses for societies' rejects" that some people claim. True, all of them have been forced to operate on poverty budgets and insufficient staff. In spite of this and surmounting the handicap of wide spread rejection, our public and private mental hospitals have until quite recently been almost the only resources for treatment of the psychotic patient. Some of our leaders have categorized our hospitals as custodial institutions only. Those of us on the "firing line" know that this is an oversimplification and far from the real truth. In spite of the neglect of Presidents, Congress, Governors, Legislators and the public in general, these institutions have continued to carry out an important treatment function. True, this has been limited by force of necessity, yet the results have been outstanding.

The aura of hopelessness which many public figures attribute to the hospitals has not been present as is easily demonstrated to anyone who is willing to delve into the records of our older institutions. There they will find ample evidence of enthusiasm and acceptance for treatment dating back to the period of the "Cult of Curability".

Some of our leaders now try to make the American people believe that there is something evil about the public mental hospital and that like an old comfortable walking shoe the system should be discarded in favor of a pair of ballet slippers. The present tendency to oversell the value of community psychiatry, necessary as it may be, is to be led down a tortuous path, the termination of

which is not yet known to anyone. This attempt to provide the much needed community-centered treatment for mental illness by depreciating the contribution of the public and private mental hospital in the past, cannot be accepted by those of us who

know the real facts. It is my personal conviction that unless our public mental hospitals are made the foundation stone for the development of community psychiatry, as has been done so successfully in Great Britain, we will end up in therapeutic chaos.

Nursing Opportunities

(Continued from page 520)

particular program is offered, and the related fees as well as the locus of responsibility for the fee.

A few experimental programs hold some promise for the future; for example, certain diploma schools have reduced the length of their programs to 2 years. In order to provide both supervised experience and some remuneration for the individual, the schools have established internships which vary in length up to 1 year and provide a stipend. Some state laws require 3 years of educational preparation for admission to examinations for licensure. This stipulation prevents both experimentation with the length of diploma school programs and also the employment, in certain states, of graduates of associate degree programs. However, efforts are currently being made in several states to revise nurse practice acts in order that such experimentation will be possible.

One diploma school has arranged a plan whereby their students may elect to attend a nearby college at the same time they are attending the hospital school. One of the more interesting community plans is that of five schools pooling teaching facilities and sharing faculty for the first year of their diploma programs. Eventually they visualize one large, community, 2- or 3-year program which will use the clinical facilities and the dormitories of the five hospitals involved in the project as well as the educational facilities of a local community college.

Enlightened nurses, educators, and others recognize that the diversity and heterogeneity of nursing programs lead to misconcep-

tions and misunderstanding on the part of patients, physicians, and potential nursing students and their parents. They realize that nursing education is presently in the process of maturation. As yet no one has come forward with a plan acceptable to all interested groups and one which will lead the way out of confusion. The American philosophy of education has always been that of diversity—not homogeneity. In keeping with this philosophy, the concern about the varieties of programs may not be germane. The challenge for nurses and others, including physicians, is to define the role of the professional nurse and the practical nurse, and to examine these roles and responsibilities in relation to the changing role of the physician in a modern scientific world. What kind of care do patients need and who can most effectively provide that care? When the answer to this question has been made explicit and has been agreed upon, it might be less difficult to predict the type of educational program in nursing essential to meet the needs of the sick of the nation, to teach preventive measures for maximum health and the like.

The AMA Committee on Nursing respectfully suggests that each physician keep informed on trends in nursing in order that he can contribute wherever possible to the improvement of nursing education programs and to the clarification of the role of the nurse.

In conclusion, the Committee suggests that the Committee on Careers, National League for Nursing, 10 Columbus Circle, New York, be contacted for information on accreditation of professional schools of nursing and for careers material in general.

Serological Aspect of Hemolytic Disease of Newborn

The present prenatal testing which includes routine blood typing, and often a single attempt for detection of incomplete antibodies in the serum of Rho negative patients, falls far short of what is expected to be done in this modern age of medicine. The documented statistical evidence shows that ABO incompatibility accounts for more hemolytic disease of newborn than that due to Rh, yet this aspect is often ignored. ABO hemolytic disease is milder and practically never causes stillbirth or severe manifestations at birth. Nevertheless, hyperbilirubinemia is not uncommon and can reach critical levels requiring exchange transfusion. This implies that testing of only Rho negative patients for the presence of antibodies is not adequate to detect all those who are being immunized by fetal red cells.

In order to determine whether immunization is taking place, a series of antibody titrations to detect any increase in antibodies is necessary and a single high titre is not valuable for prognostic purpose. This high titre could be the result of an immunization prior to the present pregnancy. For this reason it is important serologically to examine a patient's blood sample at the time of her first visit.

Progress of the hemolytic disease of newborn regardless of the blood group system to which the antigens and antibodies belong is essentially the same. The infant's red cells are attacked by maternal antibodies which enter into the fetal circulation. As we know, for some unknown reason, fetal red cells enter the mother's circulation and cause antibody production.

In addition to the ABO and Rh systems, there is occasional involvement of Kell and

Duffy systems and very rarely involvement of MNS as well as some of the other less known systems. Extensive blood group determination in every obstetric case is impractical and sometimes impossible, but a simple screening of all maternal sera against paternal erythrocytes for presence of atypical antibodies can be done if their ABO blood groups are serologically compatible.

Proper prenatal testing will assist the obstetrician:

1. to recognize any obstetrical case in which the immunization process is underway.
2. to predict severity of immunization and prognosis of pregnancy.

Both the pediatrician and the Blood Bank would be much better prepared for possible exchange transfusion of the infant or transfusion of the mother in case of difficult delivery.

In light of recent advances in the field of immunohematology the following recommendations for prenatal testing are suggested:

1. blood grouping, with Rh typing of both father and mother at the first obstetrical visit.
2. testing of all patients for the presence of antibody as early as possible (this is especially important in patients with a history of previous immunization). The test should be repeated in second trimester and monthly during third trimester. Serial titration would be necessary if antibodies are found.
3. if antibody found in a considerable titre, fresh blood sample should be sent to Blood Bank one week prior to expected date of delivery.

Z. S. ISLAMI, M.D.

Nursing Education—1963 Style

AT THE REQUEST of Director Florence M. Alexander, R.N., Ph.D., of the Department of Nursing, Division of Scientific Activities of the American Medical Association, a reprint from the July 13 issue of the JAMA entitled Educational Programs in Nursing and Related Career Opportunities is reproduced on page 518 of this issue of the Virginia Medical Monthly. The journal is happy to comply with this request and it trusts the members of The Medical Society of Virginia will read this report with care in order that they may draw their own conclusions as to which direction nursing education is taking. It is also hoped that the readers will be less confused than the Editor regarding the need for the broad spectrum of programs currently available in nursing training.

The costs of some of the more advanced nurse's training programs appear excessive. The courses leading to the Master's or Doctoral degrees require two to four years in addition to the four years spent in obtaining the Baccalaureate degree. The tuition varies from \$2,200 to \$3,500 per year. With the exception of the practical nursing program, which ranges from "free" to \$800 per annum, the costs seem uniformly high. At the present time, while difficulty is had by many schools of nursing in obtaining their quota of applicants, let us hope that prospective nurses will not see this listing and be deterred from following this essential health service by financial considerations. The reference to some nursing schools pooling teaching facilities and sharing faculties for the first year of their diploma programs with the ultimate cooperation of local community colleges should hold much promise. A somewhat similar plan, in which student nurses from several Richmond hospitals receive their basic sciences at the Richmond Professional Institute, is already in operation.

The most remarkable feature of this report is the bewildering variety of programs offered. Altogether seven different programs in nursing education are listed. They begin with a one-year practical nursing course and end with a three or more year Doctoral degree program. The latter, of course, is based on a minimum of five years of preliminary training. These phases of the program are understandable but between the practical nursing and the Baccalaureate for RN programs are three categories which appear to overlap and defy ready correlation with the other courses. A two-year diploma program, followed by an "internship," of one year, is also available in some hospitals and further adds to the confusion. Incidentally some states do not recognize the two-year graduate.

The members of the AMA Committee on Nursing desire that physicians learn of the different educational programs in nursing and related career opportunities and "believe that such an understanding is a vital link in strengthening the relationships between the medical and nursing professions." The writer is in complete accord with the expressed belief that the professions should be more closely related and regrets the day that the nursing educators divorced themselves from the medical supervision that originally existed. If a Bachelor of Arts or Sciences and an M.D. degree provide adequate formal educational background for a physician to become a generalist, a specialist in any one of numerous fields, a teacher or a research worker, it is difficult to understand why at least seven different teaching programs are needed to provide nursing care for the sick.

The AMA Committee on Nursing senses that the diversity of programs may "lead to misconceptions" and explains this wide variety on the basis that "nursing education is presently in the process of maturation" and "The American philosophy of education has always been that of diversity—not homogeneity." This may be very true but a similar diversity of education programs in any other field of endeavor does not readily come to mind.

Perhaps it is ungallant to offer yet another explanation for this plethora of programs. It is generally conceded, at least by the male members of our society, that those of the distaff side are a little more status conscious than their masculine counterparts. The thought will not go away that seven categories of nurses training offer unlimited opportunities for the nuances of station and status in which the feminine mind delights. Perhaps the writer is completely in error, and unquestionably he shouldn't have mentioned it in the first place, but nevertheless he would hate to be low man, or rather low nurse, on this newly unveiled totem pole of nursing education.

H. J. WARTHEN, M.D.

New Members.

During the month of August, the following new members were received into The Medical Society of Virginia:

Eugene A. Bain, M.D., Roanoke
Wayne Stanford Hume, M.D., Ashland
Leopoldo Elio Ladaga, M.D., Norfolk
Heinz-Otto Silbersiepe, M.D., Falls
Church
Garland Hunter Wolfe, M.D., Abingdon

Dr. Thomas H. Iden,

Berryville, has been appointed by Governor Harrison to fill the unexpired seven-year term of the late Dr. Harold Miller on the State Board of Health. His term ends June 1969.

Dr. Stuart White,

Blackstone, has been elected as school trustee for Bellefonte District of the Nottoway County School Board.

Dr. Emanuel U. Wallerstein,

Richmond, announces the closing of his office and his retirement from the practice of Oto-Laryngology. He attended the University of Virginia and Johns Hopkins Medical School and has practiced his specialty in the Professional Building since 1922.

Dr. William Whitehurst Old, III,

Lexington, has been named post surgeon for Virginia Military Institute. He succeeds Dr. E. W. Bosworth. Dr. Old will continue his private practice.

Harvey E. Jordan Laboratory.

A new laboratory at the University of Virginia will be devoted to the study of diseases of the blood and has been named the Harvey E. Jordan Hematology Research Laboratory in honor of Dr. Jordan who

spent forty-two years at the Medical School, ten of them as dean. Dr. Jordan, who was eighty-five years of age in August, attended the dedication services.

Dr. George R. Hanna

Has joined the professional staff of the School of Medical at the University of Virginia as assistant professor of neurology. He is a graduate of McGill University Medical School and took his residency training at the University of Virginia. For the past two years Dr. Hanna has been working and studying in the Aerospace Medical Research Laboratory, Bioacoustics Branch, at Wright-Patterson Air Force Base in Ohio.

Dr. Hanna will continue his research in central nervous system physiology, with his main interests in the role of the nervous system in tremors, coordination, movement of the eyes, maintenance of equilibrium and in hearing.

Zip Code Program

The Post Office Department urges all of our readers to begin using the ZIP Code Program as soon as possible. This program is designed to speed mail deliveries by cutting down on the steps now required to move a letter from sender to addressee. It will increase the utilization of electronic data processing equipment now used by mailers; it will aid materially in the manual distribution in post offices, and will pave the way for mechanized distribution in post offices when suitable equipment is available, probably within the next few years.

The ZIP Code is a five-digit coding system which identifies each post office and delivery unit and associates each with the sectional center or major office through which mail is routed for delivery. The first digit identifies the geographical area; the second and third digits, together with the first, identify the major city or sectional center; and the

fourth and fifth digits identify the post office or other delivery unit.

Mail to The Medical Society of Virginia or Virginia Medical Monthly should be addressed to:

4205 Dover Road
Richmond, Virginia 23221

Check your ZIP Code number and start using it on your stationery—invoices, letterheads and envelopes—as soon as possible.

Physicians

Wishing postgraduate training of three months or more or residency in anesthesiology are invited to contact D. W. Eastwood, M.D., University of Virginia, Charlottesville. (*Adv.*)

The Virginia State Department of Health

Invites applications from physicians interested in public health as a career. Appointments available as directors of local health departments with inservice training and state-financed postgraduate study leading to Master of Public Health Degree. Sal-

ary range \$12,000 to \$15,675; entrance salary dependent upon qualifications. Applicants must be American citizens, under 48, and eligible for Virginia licensure; liberal sick leave, vacation, group life insurance, malpractice insurance and retirement benefits. Write: Director, Local Health Services, Virginia State Department of Health, Richmond 19, Virginia. (*Adv.*)

Medical Illustration Service.

We will prepare art-work, charts, graphs and diagrammatic material to your written specifications for papers, lectures or other needs. Rapid, neat service. Reasonable rates. Write N. Apgar, 2207 Buford Road, Richmond, Virginia 23235. (*Adv.*)

Doctor's Suite Available.

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Obituaries

Dr. Fred Clifton Downey,

Edinburg, died August 8th at the age of eighty-seven. He was a native of Edinburg and graduated from the Baltimore Medical College in 1898. He began his practice in Shenandoah County in 1902. Dr. Downey was a past member of the Shenandoah County School Board, President of the Farmer's Bank, and a member of the Lions Club and the Area Chamber of Commerce. He had been a member of the Masonic Lodge for fifty years. Dr. Downey served in the Spanish-American War in the Army Medical Corps. He received the distinguished citizens award for Madison District from the Veterans of Foreign Wars. Dr. Downey had been a member of The Medical Society of Virginia for sixty years.

His wife, one son and a daughter survive him.

Dr. Baxter Israel Bell,

Williamsburg, died September 9th. He was seventy-four years of age and graduated from the Medical College of Virginia in 1915. Dr. Bell had practiced in Williamsburg for more than forty-five years and was founder of the Bell Hospital. He formerly served as staff physician for the College of William and Mary and for Colonial Williamsburg Incorporated. Dr. Bell had been a member of The Medical Society of Virginia since 1918. He was named General Practitioner of the Year for Virginia in 1957.

His wife, two daughters, and a son, Dr. Bell, Jr., survive him.

Dr. Beverley Randolph Wellford,

Richmond, died September 5th. He was sixty-nine years of age and received his medical degree from the University of Virginia in 1917. Dr. Wellford began his practice in New York City and located in Richmond in 1923. He served as Captain in the army during World War I. Dr. Wellford

was a past president of the Richmond Ear, Nose and Throat Society, the Richmond Eye Hospital, and the Virginia Historical Society. He had been a member of The Medical Society of Virginia since 1924.

His wife and two daughters survive him.

Dr. Booker.

WHEREAS, Dr. Robert Eubank Booker, a beloved member of the Northern Neck of Virginia Medical Association, age 82, passed into life eternal on February 25, 1963, and

WHEREAS, We his colleagues and friends of many years, recognize the great loss to our profession and to the Northern Neck of Virginia, wish to pay tribute to his memory by the unanimous adoption of this resolution.

Dr. Booker was born in Richmond County on August 13, 1880, and upon graduation at the University of Maryland in 1902 located in Northumberland County, where for 60 years, thru storm and sunshine, he ministered to the sick and confronted aching hearts and those weary of earth with the Christian faith and its strict principles to which he always strictly adhered.

The practice of medicine in the Booker family in the Northern Neck traces back over a hundred years. The first physician being Dr. Erasmus Derwin Booker who located in Richmond County in 1848. He was followed by his son, Dr. Judson Hazeltine Booker in 1902. He was succeeded by his nephew, Dr. Robert Eubank Booker. Later two of Dr. Booker's sons joined him in the practice of medicine, Dr. C. Leonard Booker in 1937 and Dr. James Motley Booker in 1946.

He is survived by his wife, the former Mabel Gertrude Motley of Farnham, whom he married November 23, 1904. Beside the two aforesaid physicians, a son Robert E. Booker, Jr., a daughter Mrs. Robert M. Norris, Jr., fourteen grandchildren and one great grandchild.

Dr. Booker was always a devout Baptist and upon locating in Northumberland County he transferred from Farnham Baptist Church in Richmond County to Bethany where he was elected a Deacon in 1906, holding this office until 1962; upon his request he was made Deacon Emeritus.

Active in the affairs of his county of Northumberland, he was elected Supervisor from Lottsburg District on August 10, 1914 and continued in that office until January 1, 1936.

During World War I he was chairman of the

County Selective Service Board and again served as chairman during World War II.

He was a "horse and buggy doctor", until 1912 when he bought his first Ford and during his sixty years of rural practice, delivered more than 2700 babies.

He was a charter member and served twice as president of the Northern Neck Medical Association and served twenty years as its secretary. He was also a member of The Medical Society of Virginia and American Medical Association.

WHEREAS, We, his fellow members of the Northern Neck Medical Association, unite with his many grateful patients and friends to share with his family

in their bereavement knowing that though his earthly life has ended, his influence and love for his fellow man will long be remembered.

NOW, THEREFORE, BE IT RESOLVED by our association on this 23 day of May that we convey to his family our sincere sympathy and deep respect for his memory. This evidence of our esteem and love for him will be recorded as a memorial to him for all posterity to see.

BE IT FURTHER RESOLVED, That a copy of this Resolution be sent to his family, a copy to the Virginia Medical Monthly and a copy to be preserved as a part of the permanent records of this the Northern Neck Medical Association.

C. T. PEIRCE, M.D.

Guest Editorial . . .

A Team Approach

The Private Practitioner and the Health Director

TO CLARIFY my position allow me to state that I heartily favor the system of the private practice of medicine, with no mediator between, and no regulation or law governing the relationship of the physician and his patient.

But as one who for a number of years has been concerned with the problems of community health as distinguished from individual health, and for a longer preceding period engaged in the private practice of medicine, I recognize several problems which seriously impede the maximum of efficient utilization of medical talent.

One is the necessity for economical utilization of public funds with the aim of the greatest contribution to the productivity and usefulness of the recipient of indigent services, rather than wastefully expending large sums on unproven and experimental procedures designed primarily to prolong life for unpredictable periods of uselessness and suffering.

Another results from the gap imposed by conventional medical ethics which requires that the patient shall select his physician, request his services, pay for services as rendered, and discharge the physician when he no longer feels he requires his services. Since the patient is no judge of the need for services, and prolonged observation and treatment may be necessary to maintain him in his maximum attainable state of health, the discharged physician has no recourse and cannot continue his care of the patient. Consequently many chronically ill persons face deterioration in health, and distant or imminent tragedy, who could have been maintained in a state of relatively stable health. It is a wasteful method.

To effect any change requires an alteration in attitudes of both the private practicing physician and of public health administration, but it can be done, and illustrative patterns presently exist.

The contagious tubercular or venereal diseased patient can, by law, be forced to continue treatment. Other forms of contagion are likewise liable to legal control. These conditions are legally covered because they vitally affect the health of others who may be exposed to them, and consequently

are upheld by the courts as involving public health protection as distinguished from private health hazards. The diabetic, the hypertensive, the arthritic, the coronary risk does not similarly involve the health of others, and consequently cannot be protected by law as endangering public health.

But the same principle can be followed on a permissive, cooperative basis, in which the private physician calls the local health director, telling him of the chronically ill patient who hazards his physical condition by his refusal to continue treatment. The health director, acting in his capacity as health advisor to the community, with no axes to grind, and his sole interest the well-being of the patient, can advise and insist that the patient continue treatment for his own self-protection.

Examples of the effectiveness of persuasion in contagious disease control, epidemiological study and contact investigation, indicate that favorable response can and often will result from persuasion and explanation.

Although greatly improved, there is yet a residual of resentment and jealousy, and a feeling of unjustified competition between the private physician and public health directors. It can be eliminated, and will be when each realizes the need of the other, that they cannot work effectively alone, and can be mutually helpful.

The increasingly older population, resulting largely from the very successful degree of contagious disease control, brings into focus the need for more effective chronic disease control. Both the private physicians and public health face a realization that a problem exists which lacks coordinated and continuous effort. Medical research is concentrating on the chronic disease problem, but research is without value until applied to the individual with the problem.

A concentrated and cooperative effort by the private physician and public health directors provides a hopeful approach, and each discipline needs the other.

These suggestions may seem radical. They are not. They only extend present functions, can contribute greatly and effectively to a field of increasing importance, create a team, and utilize talents presently functioning as *prima donnas*.

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The Clinical Use of Echo-Encephalography

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Echo-encephalography is a safe and painless method for studying intracranial disease. It frequently makes a valuable contribution and deserves wider use in this country.

ECHO-ENCEPHALOGRAPHY is a valuable method of studying the intracranial contents, reported in the past predominantly by European workers. It has been used in many European hospitals on thousands of patients since 1955 when Leksell¹ introduced a practical technique for determining midline displacement of the brain by ultrasonic reflections through the intact skull. Despite the advantages and numerous applications of the technique, especially in the evaluation of cranial trauma, the equipment has been little used in America. French et al.² in 1951 used direct cortical application of echo-encephalography in locating brain tumors. Ballantine, Hueter and Bolt³ reported use of transmission ultrasonics in 1954 and concluded it was impractical, although they suggested the technique employing echo reflections through the intact skull might become useful. The works of Lithander,^{4,5,6,7} DeVlieger and co-workers^{8,9,10} and Jeppsson,¹¹ contain excellent discussions of the technical aspects of intracranial ultrasonics as well as comprehensive reviews of the early clinical and experimental work. Additional but less extensive reports have come from Great Britain.^{12,13,14,15,16} Experience at this institution has shown the echo technique to be a valuable addition to the diagnostic study of neurologic problems.

Materials and Methods

The apparatus was a Siemens echo-encephalograph, dimensions approximately 25 x 40 x 60 cm., weight 45 pounds without the camera. The instrument was a modification for intracerebral use of the USIP 9 model.⁷ Photographs were made of the oscilloscopic tracing with a Polaroid-Land camera. The equipment was readily moved with a cart. (Fig. 1)



Fig. 1. Photograph of patient being evaluated with echo-encephalography. The camera on the left is attached to the oscilloscope of the unit. The entire apparatus rests on the portable cart.

The ultrasonic vibrations were produced and received by two probes 24 mm. in diameter, of one or two megacycles per second, and by a 10 mm. probe of four megacycles. These probes (transducers) converted electrical energy to mechanical vibrations by means of a barium titanate crystal. The returning vibrations were reconverted to electrical energy and displayed on the oscil-

loscopic screen as deflections from the base line. The instrument could be calibrated so that one unit of deflection on the abscissa equaled one millimeter in brain.

The cranial midline is here defined as the midsagittal plane of the skull and is not subject to shift. The cerebral midline is the plane of such structures as the third ventricle and septum pellucidum, normally occupying the cranial midline, but displaced with lateral shift of the brain. The cranial midline was determined first in routine use with probes held firmly against each temple of the patient. One probe then transmitted sound, the other received. The sound waves were directed from the sending probe, traversed the midline without alteration and reached the receiving probe, causing a deflection from the baseline. The total distance travelled by the transmitted beam was then twice the distance to the midline. The transmission distance is in fact double the distance to the midline, but was equal to the distance from a probe to the midline and back. The transmission distance therefore was a valid control of the echo technique.

A single probe thereafter served as both transmitter and receiver to locate the cerebral midline by the echo technique. The echo was obtained from midline structures of the brain when the ultrasonic probe was placed at right angles to the temple. This reflection of sound routinely was recorded alternately from either side, first directly above the external auditory meatus, and then approximately three centimeters anteriorly. If shift of midline structures were present, the midline reflection would appear nearer to one side, and equally distant from the other side, compared to the cranial midline control. The total time needed for an echo-encephalogram (echogram) in practice was seldom longer than five minutes, including time for a brief explanation to the patient.

Illustrative Cases

The cases to be described are chosen from the first seventy-five examined with echo-

encephalography at the University of Virginia Hospital.



Fig. 2. A. The arrow shows the cranial midline as determined by the transmission technique. The first deflection on the left is the stimulus artefact, and in this and all other instances is the position of the transmitting probe. B & C. All successive recordings are made with the echo technique. Passage of the sound waves through scalp and skull results in a complex set of initial deflections on the left side of the records. The arrows in B and C show the cerebral midline determined from the right and left sides of the head. The shift is 9 mm., as measured by 9 units between arrows in B and C. D. Echogram from left side of head taken evening after trephining. Midline shift is now 6 mm. E. Echogram taken one day after removal of subdural hematoma. Shift is now reduced to 4 mm. F & G. Records taken on second post-operative day. F shows the reflections of the walls of the 3rd ventricle, G the septum pellucidum—all are in the midline.

Case 1. An 88-year-old woman had a history of cranial trauma several weeks before admission. She had complained of headache, was found to be lethargic and had weakness on the right side. The echogram revealed a 9 mm. shift of the midline to the right (Fig. 2), a finding confirmed by angiography (Fig. 3). A subdural hematoma was subse-



Fig. 3. Case 1. Cerebral angiogram showing displacement of anterior cerebral artery to the right and avascular zone beneath the calvaria on the left.

quently removed. Echograms were done on several occasions after trephination. The shift was found the evening of craniotomy to have decreased to 6 mm. The next day the patient was improved clinically and had a 4 mm. shift. By evening of the second day, the shift was no longer detectable and the patient was much improved. Subsequent determinations have revealed normal position of the midline.

Comment: It was possible in this case to compare clinical improvement with gradual lessening of midline displacement after craniotomy. Unusual reflections (Fig. 4) were recorded from the site of the subdural hema-

toma present over the convexity of the fronto-parietal region, above the usual placement of the probe in determining the midline. The flat baseline preceding these

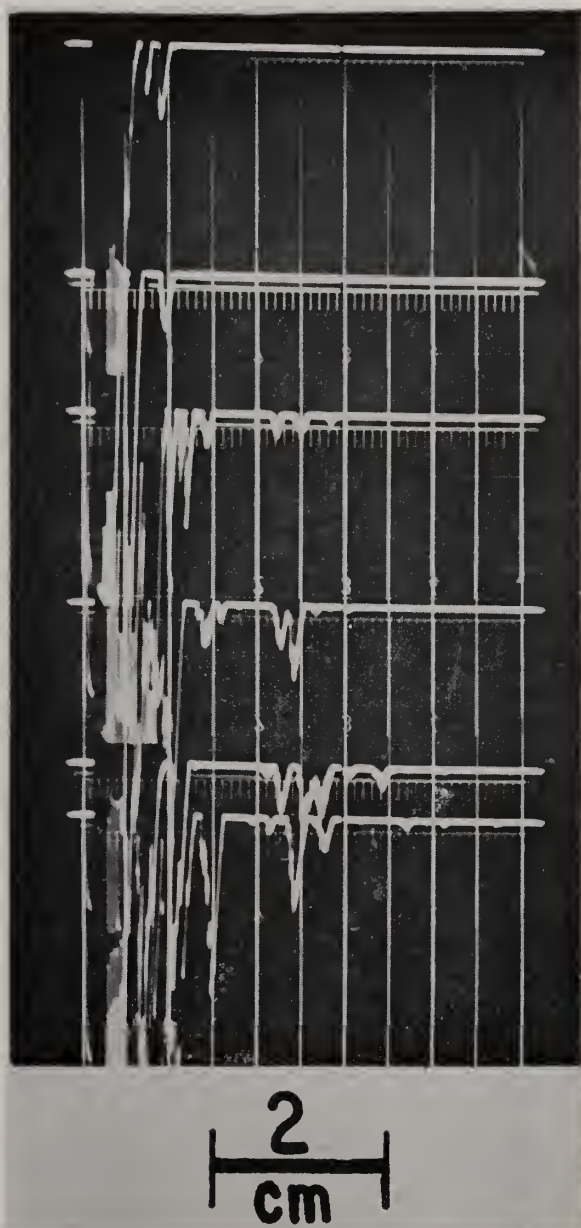


Fig. 4. Case 1. Six echo-encephalographic records taken as the probe was moved in relation to the skull overlying the subdural hematoma. The lower four tracings all have a flat baseline preceding unusual reflections. The flatness is suggestive of homogeneity of the underlying transmitting medium.

abnormal reflections indicated homogenous material. The reflections occurred approximately 2 cm. deep to the outer table of the skull, the depth of the hematoma as seen at trephination.

Case 2. A 10-month-old girl sustained a left parietal fracture several weeks before she was brought to the emergency room at night because of increasing lethargy. Echo-encephalography revealed a 5 mm. shift of the midline structures to the right (Fig. 5).

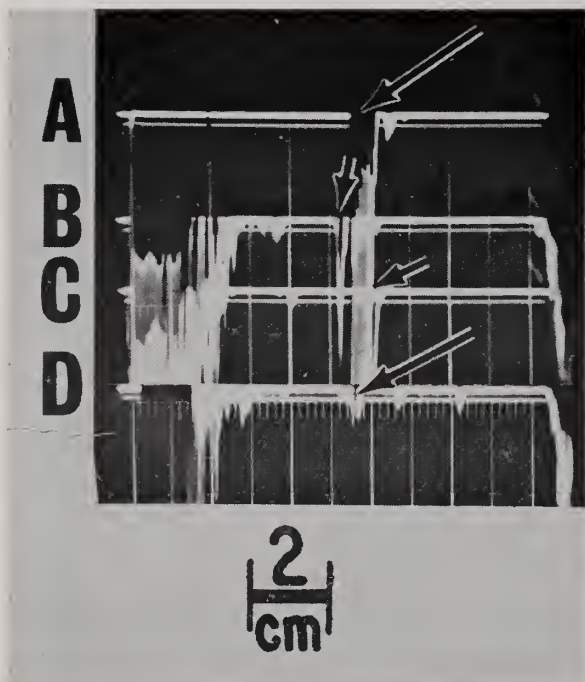


Fig. 5. Case 2. A. The arrow points to the cranial midline in a tracing made with the transmission technique. B. Echogram made from right side showing cerebral midline. C. Tracing of echogram from left. The distance between arrows in B and C represents a displacement of 5 mm. to the right. D. Echogram made after trephination, showing that the midline has returned to normal position.

Trephines were done on the left side, the decision based on the clinical data and the echogram, because of the age of the patient. After removal of approximately thirty milliliters of straw-colored fluid over the left hemisphere, cerebral re-expansion was seen, and subsequent echograms showed no displacement of the midline, although further checks are planned to evaluate possible future reaccumulation.

Comment: Echo-encephalography was useful here in predicting the site of the lesion and side of preference for trephines in a young patient on whom angiography would have been difficult and performed only with general anesthesia. Resolution of midline shift was seen after craniotomy.

Case 3. A 2-month-old boy was studied because of a myelomeningocele and a large head. The routine echographic method revealed no discrepancy between cranial and cerebral midlines. The technique of Lithander⁷ for determining ventricular dilata-

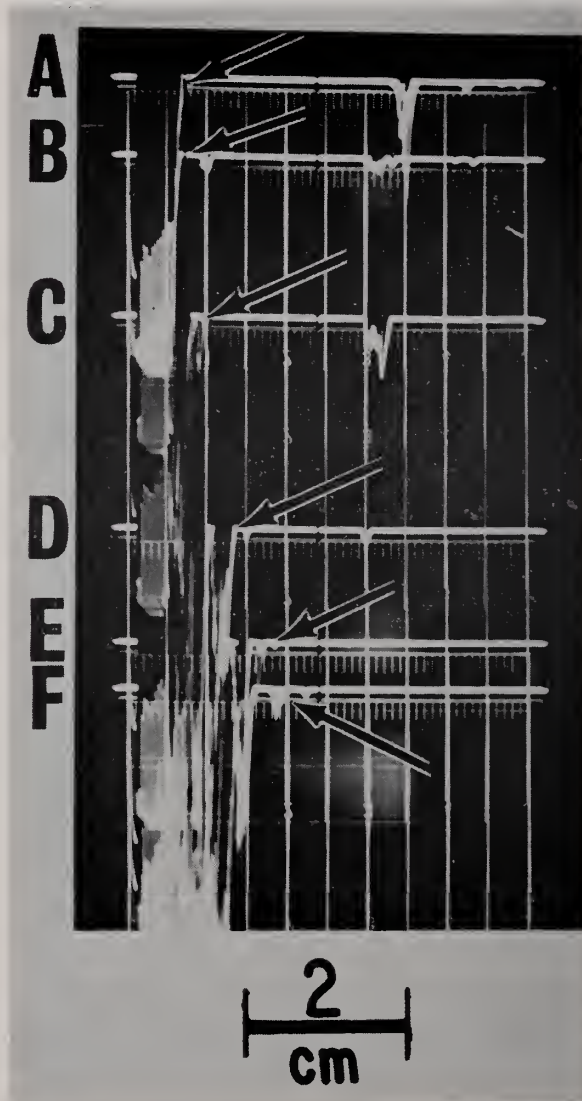


Fig. 6. Case 3. A to F are echograms to measure width of the cerebral substance by moving a probe from the frontal to occipital region, approximately 1 cm. lateral to the sagittal suture. The arrows indicate the distance from probe to roof of lateral ventricle. The shortest distance of 8 mm. is shown in A, the greatest distance of 20 mm. in F (over the more deeply placed occipital horn).

tion was then used. The probes were placed at many points on the convex surface of the frontal and parietal regions, to measure the distance to the roof of the lateral ventricles (Fig. 6). The minimum distance of

approximately 8 mm. was much shorter than usual and included soft tissues, skull, and atrophic brain.

Comment: The degree of hydrocephalus in this infant was estimated without pneumoencephalography.

Case 4. A 49-year-old man was admitted to the hospital because of mental deterioration. The echogram (Fig. 7) showed mod-



Fig. 7. Case 4. A. The arrow indicates the cranial midline (transmission technique). B. Echogram with single deflection probably arising from septum pellucidum. C. The two deflections in this echogram, equidistant from the midline, indicate that the walls of the 3rd ventricle are 10 mm. apart.

erate widening of the third ventricle. Diffuse cerebral atrophy was seen in the pneumoencephalogram with a third ventricle 11 mm. wide (Fig. 8) as compared with 10 mm. in the echogram.

Comment: Cerebral atrophy in this adult was determined by measuring the width of the third ventricle. The thicker skull of the adult usually prevents determination of the size of the lateral ventricles as in case 3. En-

largement of the third ventricle may be caused by cerebral atrophy or increased intracerebral pressure, and the differentiation must be made on other grounds.

Case 5. A 15-year-old girl was referred for evaluation of left sided focal seizures. Roentgenograms of the skull failed to reveal cranial asymmetry, nor were there any clinical evidences of limb asymmetry to suggest



Fig. 8. Case 4. Pneumoencephalogram with scale immediately below a third ventricle having a maximum width of 11 mm.

unilateral infantile cerebral damage as the cause of her convulsions. A cerebral angiogram was then contemplated. A midline shift of 7 mm. toward the side giving rise to the convulsive discharge was then found in the echogram (Fig. 9). A pneumoencephalogram was therefore done in anticipation of probable cerebral atrophy. Moderate ventricular dilatation was found, with the third ventricle shifted 6 mm. to the right.

Comment: Echo-encephalography was valuable by indicating the preferable contrast study, and in suggesting cerebral atrophy with shift toward the seizure focus. It seems unlikely that the moderate atrophy seen in this case would have been shown by angiography.

Case 6. A 48-year-old woman was re-

ferred because of a possible intracerebral tumor. A calcified and midsagittal pineal gland was found in the radiograph of the skull. When reflections were obtained from

3 mm. shift of the internal cerebral vein to the left.

Comment: Because of the posterior position of the pineal gland, frontal shift is com-

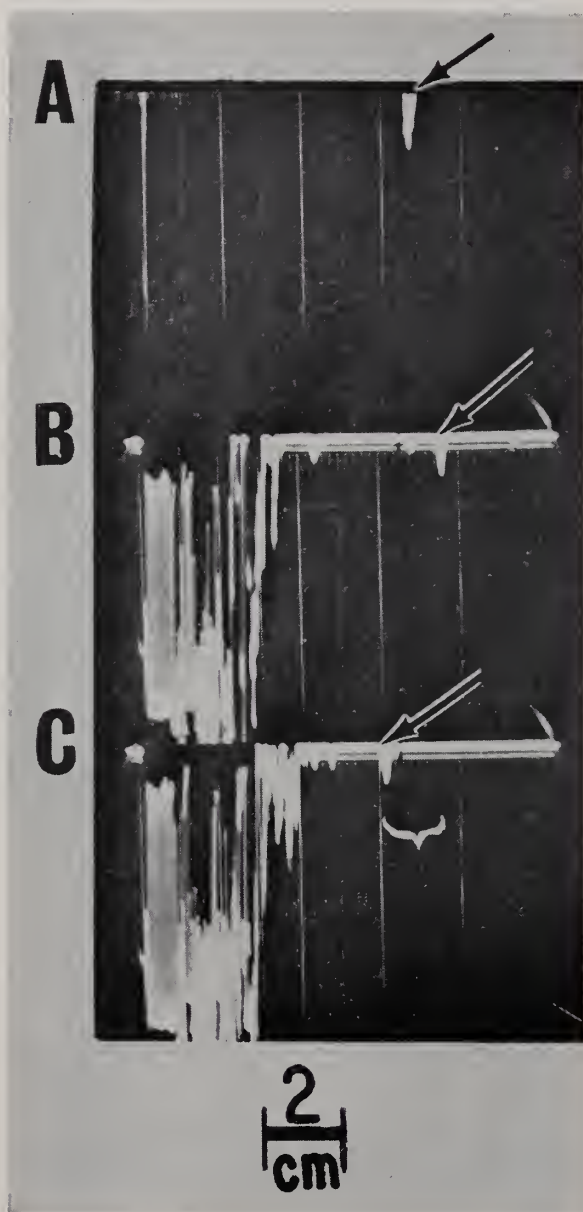


Fig. 9. Case 5. A. Cranial midline is shown at arrow. B. Echogram from the left, C from right. The bracket indicates a 7 mm. displacement of midline to the right, the side of the seizure focus.

the posterior part of the third ventricle, there was no echographic shift, but as the probe was brought anteriorly to about 3 cm. in front of the ear, increasing displacement was noted with a maximum of 3 mm. (Fig. 10). Angiography subsequently verified a

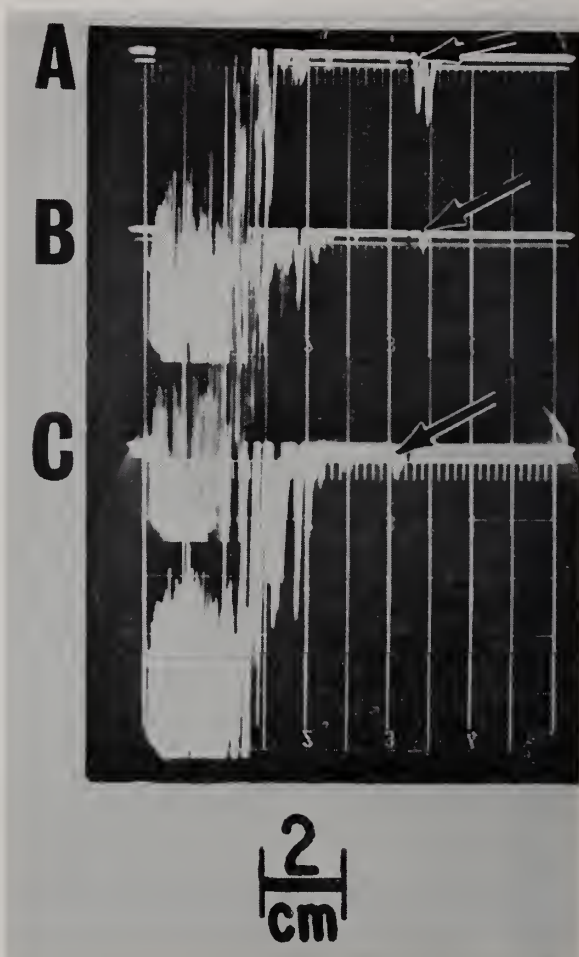


Fig. 10. Case 6. A. Cranial midline control. B & C. Echograms are recorded 3 cm. anterior to the ear from left and right sides. The midline is displaced 3 mm. to the left.

patible with normal position of the pineal. Echo-encephalography was of value in showing frontal shift which did not cause pineal displacement.

Case 7. A 66-year-old man was studied because of exophthalmos on the right. He had sustained two myocardial infarcts and was considered a poor subject for contrast studies. Pathologic uptake in the right frontotemporal region was found by the cerebral scanning technique. (I_{131}). The echogram from this region contained abnormal waves suggestive of a mass lesion

(Fig. 11). On the basis of the clinical findings and these studies, biopsy of the lesion was done through a trephine. A meningioma of the sphenoid wing was subsequently resected.

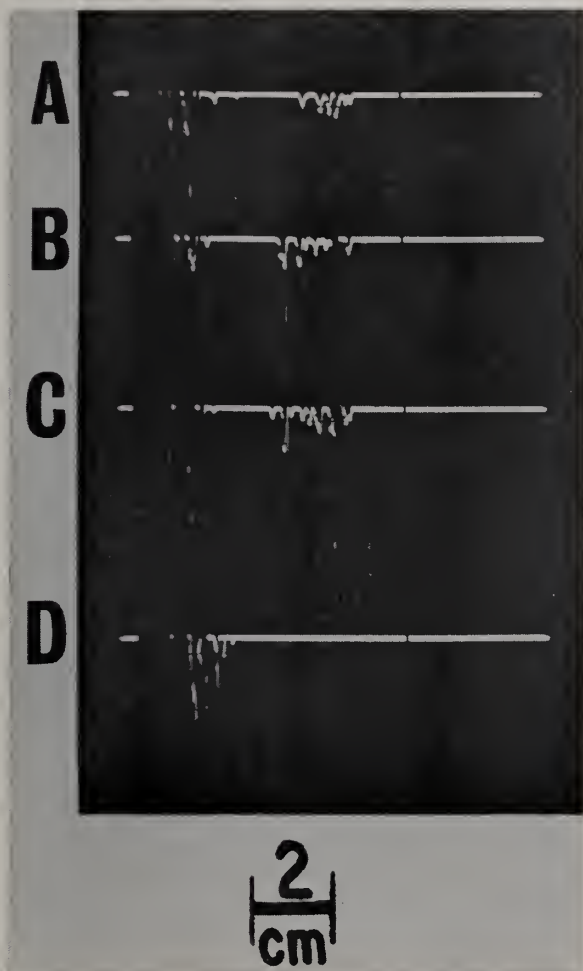


Fig. 11. Case 7. Echograms taken from frontotemporal region with probe a few cms. posterior to orbit. A, B and C are from right side and reveal reflections from the tumor. D is a recording from left, showing stimulus artefact and a flat baseline. None of these tracings shows the cerebral midline because of the relatively anterior placement of the probe.

Comment: The echogram in this case showed the approximate boundaries of the tumor. The patient was a poor risk for the conventional procedures of angiography or pneumography and was spared these traumata by the more innocuous procedures of radioactive scanning and echo-encephalography.

Case 8. A 26-year-old man was admitted for evaluation of severe incapacitating headache and had bloody cerebro-spinal fluid

with pressure of 600 mm. Angiography did not reveal a source of bleeding or displacement of blood vessels. The echogram (Fig. 12) was difficult to interpret because of

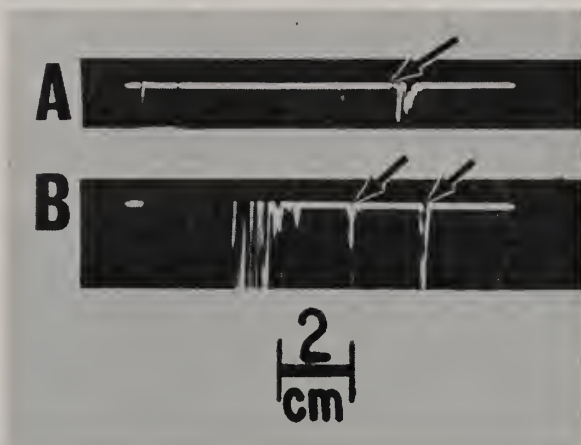


Fig. 12. Case 8. A. Cranial midline control. B. Echogram with arrows showing mass with walls equidistant from the midline.

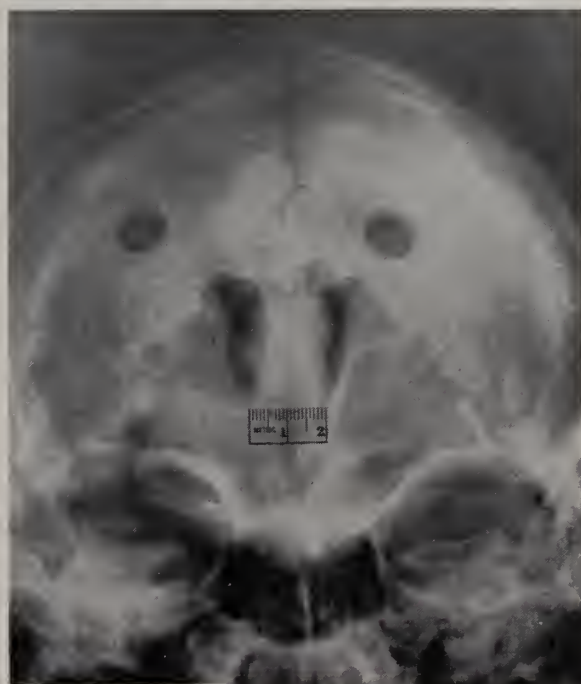


Fig. 13. Case 8. The lateral ventricles in this ventriculogram are separated by a mass 20 mm. wide.

prominent reflections approximately 1 cm. on either side of the midline. Because one of these reflections was predominant, the diagnosis of shift was first considered. Subsequent echograms showed a midline echo as well, however, so that either third ventricular mass or dilatation was suspected to ex-

plain the parasagittal echoes 2 cm. apart. The ventriculogram (Fig. 13) revealed that the lateral ventricles were separated by a maximum of 2 cm. At craniotomy, clotted blood without tumor was removed from the cavum septi pellucidi.

Comment: Because of a greatly widened midline structure, a third ventricular tumor or hydrocephalus was considered, rather than the usual finding of a hemorrhage in

shadow with scattered calcification in the region of the pineal gland (Fig. 14). Echo-encephalography was performed with many placements of the probe in relation to the third ventricle. Recordings from the posterior parts revealed unusual reflections not present anteriorly (Fig. 15).

Comment: The shape of the tumor could be estimated by the width of the abnormal midline reflections, with multiple place-

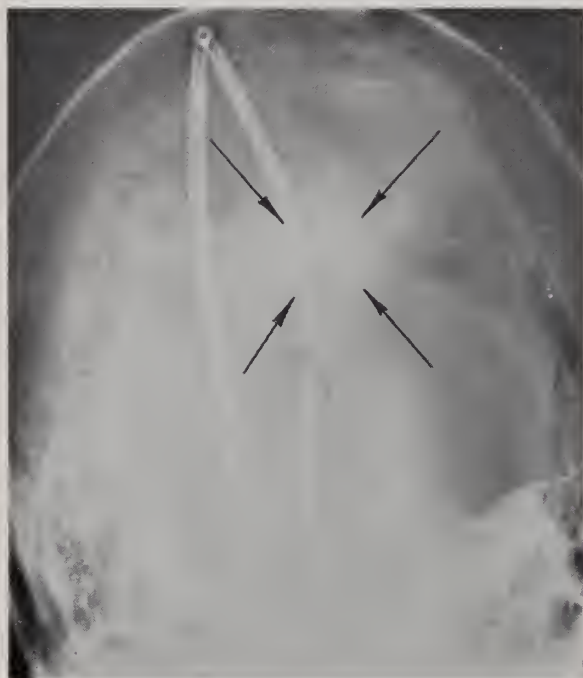


Fig. 14. Case 9. The arrows delineate a calcified mass in the pineal region in this roentgenogram. The linear shadow is the tube used to bypass the third ventricle.

this region. The width of the lesion delineated in the echogram was congruous with the ventriculogram, and the presence of blood rather than tumor explains the absence of multiple reflections from the cyst.

Case 9. A 42-year-old man was admitted in 1962 for evaluation of increasing severity of headaches. Internal hydrocephalus secondary to compression of the cerebral aqueduct by a tumor in the pineal region had been relieved in 1952 by placement of a tube from the lateral ventricle to cisterna magna. Cobalt radiation to the posterior part of the third ventricle had been given periodically since then. Radiograms of the skull taken on this second admission showed an enlarged

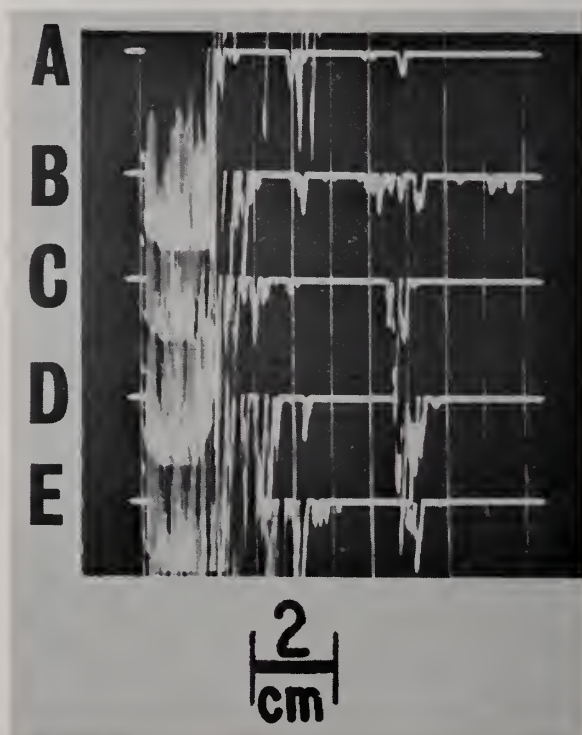


Fig. 15. Echo-encephalographic tracings A to E are from multiple placements of the probe anteriorly to posteriorly in the region of the third ventricle. A shows only the midline, B the greatest width of the tumor. C, D and E are reflections from regions where the tumor is narrower.

ments of the probe. Using echo-encephalography, the presence of tumor is usually inferred from midline displacement, although on occasion, direct sounding is possible. In case 7, the tumor was beneath the relatively thin temporal bone, and in cases 8 and 9 the mass occupied the midsagittal region usually seen by echogram.

Discussion

Data from various sources now provide a reasonable basis for the clinical use of echo-

encephalography, although its potential usefulness has not been fully explored, nor its limitations completely delineated. Opinions differ, for example, as to which structures usually are responsible for the dominant midline echo^{6,10,11,17} although all workers agree that it lies in the midsagittal plane of the brain. The upper limits of normal displacement of the midline have been set by different workers^{7,11} at either 2 or 3 mm., but as with other techniques measuring shifts of the midline, minimal displacements are best interpreted in correlation with clinical data. Some minor problems thus are in need of clarification. Information is available, however, regarding generally agreed upon applications and limitations.

Echo-encephalography is simple, safe, painless and quick. It allows detection of midline shift in patients without calcified pineal glands. The width of the third ventricle can usually be estimated as a measure of ventricular dilatation. Determinations may be made as often as needed. Results are available on Polaroid photographs at the time of determination and may then be recorded directly on the chart. The instrument is easily portable and may be used wherever alternating current is available. Shift of the frontal lobe may occasionally be detected when a calcified pineal gland is in the midline; posterior shifts are determinable in regions not seen in carotid angiograms. The only significant cost of operation is for photographic film.

Echo-encephalography may be used with outpatients and as part of routine neurologic examination. It may be offered to patients refusing contrast studies; displacement of midline structures would then offer a reasonable basis for further diagnostic studies. Patients having subjective complaints such as headaches or personality change may be easily checked with echo-encephalography, and if shift is found, strong evidence is available for an organic lesion. The apparatus may be used with poorly cooperative and comatose patients. It is of particular value in screening persons with cranial trauma

when epidural, subdural, or intracerebral hemorrhage is considered.

Children usually have thinner skulls than adults, and additional information can sometimes be gained with special placements of the probe, as shown by the demonstration of hydrocephalus in case 3. Infants may readily and safely be studied when angiography and pneumoencephalography could be done only with difficulty and using general anesthesia. The course of cerebral disorders with midline shift may be evaluated repeatedly, and clinical improvement correlated with restoration of normal midline position as in case 1. On occasion, worsening of the patient may be predicted before it is clinically apparent, by detection of increased midline shift. The value of urea, hypothermia and other agents used to decrease cerebral swelling with midline shift can be determined. Repeated studies at short intervals allow close and innocuous monitoring. When immediate craniotomy is necessary, the echogram can indicate the appropriate side for initial exploration. The best side for angiography may be determined, and the contrast study of preference suggested as in case 5.

Echo-encephalography has certain limitations. Information may be sparse in comparison to contrast studies; only shifts above the tentorium are determined. Reflections from the falx cerebri may be misleading. Cranial asymmetry or swelling of soft tissues may alter the interpretation if not taken into account. Photographic reproduction does not allow recording of moment-to-moment changes such as vascular pulsation; motion pictures or tape recordings, not yet employed, could overcome this defect. Single or bilateral lesions not causing shift may go undetected, so that lack of displacement does not rule out an intracranial mass. Occasionally, it is not possible to obtain midline echoes from elderly patients with thick skulls. The intracranial lesion may alter reception of returning midline echoes by absorbing or by deflecting them away from the receiving probe.

Despite these present disadvantages in certain cases, much useful information may be safely gained. Morbidity from this clinical test, even when used repeatedly, has not been reported. The mean acoustic output is estimated at 12.0×10^{-4} watts per square cm. which Jeppsson¹¹ considers well within the limits of safety. The reliability and validity of the method may be determined from the extensive data of Jeppsson¹¹ and Lithander.⁷ Jeppsson in 372 cases found an accuracy of $97.3\% \pm 0.9\%$ for midline displacement compared to radiography as controls, using a 2 mm. shift as his criterion. Only two false positive echograms were encountered in 205 patients without radiographic displacement.

Various applications of echo-encephalography have been shown in the illustrative cases. The technique is a valuable supplement to clinical evaluation and contrast studies in investigating intracranial disease. It has been used for seven years in Europe, and has proved convenient and reliable. As with any new technique, refinements may be anticipated to increase clinical usefulness.

NOTES

1. Fellow in Neuropathology (Dr. Dreese); Professor of Neuropathology (Dr. Netsky). From the Department of Pathology and the Division of Neurology of the University of Virginia School of Medicine.
2. This investigation was supported in part by grants from the American Cancer Society and grant 2B-5383 from the National Institute of Neurological Diseases and Blindness, Public Health Service. The senior author is deeply grateful to Drs. Lithander (Stockholm) and deVlieger (Rotterdam) for instruction in the use of echo-encephalography and their many personal kindnesses. We are indebted to Drs. Gayle Crutchfield and Mc-Lemore Birdsong for the use of patients on their services.

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Cerebellar Abscess from an Unusual Source

Two-stage Removal with Recovery

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A cerebellar abscess with several most unusual and interesting features is reported.

CEREBELLAR ABSCESS from osteomyelitis of the femur as a single localizable, surgically curable lesion is rather unusual. Often when osteomyelitis occurred in the long bones years ago before the advent of penicillin and the sulfa drugs, intracranial infectious lesions from the osteomyelitis were multiple and often fatal. This case is considered worthy of documentation because it represents a single well encapsulated abscess in the right cerebellar hemisphere, apparently blood borne from an old osteomyelitis of the left femur of more than forty years' duration, with two-stage operative attack upon the abscess and eventual recovery of the patient.

Case Report

Raymond C., a white man age 55, was admitted to the Medical College of Virginia Hospital on August 30, 1961, having been referred by Dr. Charles Williams of Richmond, and discharged on October 30, 1961. He had been seen at another Hospital in the City of Richmond and was found to have marked dysarthria, diplopia, frequent vom-

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Editor's Note: Dr. Meredith died December 16, 1962.

iting (lying in bed on his side with an emesis basin kept close at hand) and severe occipital pain. There had been a history of head injury a month previously and therefore, of course, a subdural hematoma was thought of. He had been deaf in the right ear for three years suggesting the possibility of an acoustic neurinoma, as he had marked vomiting and dysphagia at the time of admission to the MCV Hospital, together with the other suggestive symptoms cited above. He also had occasional diplopia with slight blurring of vision but there was no choking of the optic disks at any time. At the time of admission to MCV Hospital he gave no other history of illness, operation, infection or trauma of significance.

On examination his blood pressure was found to be elevated to 210/140 and it was elevated to 230/170 on several occasions following his admission to the hospital, suggesting the possibility of a pheochromocytoma as the cause of the hypertension. A regitine test was negative on August 31, carried out by Dr. Richard Kirkland, tending to rule out apheochromocytoma. A spinal puncture performed on September 3 by the writer showed an initial pressure of 300 mms. of water with the patient completely relaxed. Only the fluid in the monometer was removed and the needle then rapidly taken out of the spinal canal. The spinal fluid protein was 90 mgs. percent. No cells were recorded in the fluid. Following the spinal puncture, he was given 90 grams of urea intravenously as an intracranial decompression procedure and preparations made for craniotomy the following day. His preoperative blood count showed 15.2 grams of hemoglobin and 11,000 white

cells. Urinalysis was essentially negative and the blood Wassermann reaction was negative. Fasting blood sugar was 105 mgs. percent and urea nitrogen was 18 mgs. percent.

A ventriculogram on September 4, 1961, showed a quite large and dilated ventricular system (Figs. 1 and 2). There was no filling



Fig. 1. AP ventriculogram showing the enormous dilatation of the lateral ventricles and the third ventricle.

of the fourth ventricle at all and the Aqueduct of Sylvius seemed to be pushed forward suggesting a cerebellar or posterior fossa mass lesion (Fig. 2). Because of the deafness in the right ear for several years an eighth nerve tumor was thought of, and having been hit sharply on the head rather recently a subdural hematoma had also to be ruled out. A metastatic lesion was also under suspicion because of a possible significant lung lesion seen in the x-ray films of his chest.

As events turned out it proved to be none of these lesions, but an abscess of the right cerebellar hemisphere, entirely unsuspected at the time of surgery. The occipital bone was removed and it was found the right cerebellar hemisphere seemed somewhat fuller and larger than the left. Therefore, a

small one cm. incision was made in the dura only over the right cerebellar hemisphere. A ventricular needle was then introduced slowly and rather deeply and fairly medially into the right cerebellar hemisphere. At once thick creamy yellow pus was encountered. (Fig. 5) The dura was sealed off with the

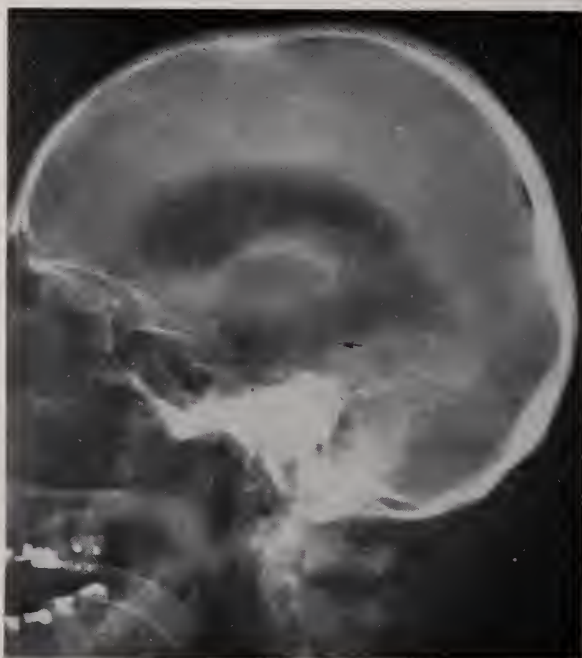


Fig. 2. Lateral ventriculogram showing the forward displacement of the aqueduct (arrow) and the generalized dilatation of the ventricles. Notice the quite large lateral ventricles and the very well outlined third ventricle with no air in the fourth ventricle, demonstrating a mass lesion in the cerebellum.

electrosurgical unit, the pus was sent to the laboratory and after a long and detailed bacteriological study about which there was confusion from time to time it was decided that it could well have been due to a nocardia fungus infection, as nothing definitely in the ordinary bacteria line grew out of the pus. Another thought expressed by the bacteriology department was that it was one of the rarer types of bacteria, ramibacterium pseudoramosum, which is often found as a saprophyte in the gastorintestinal tract, appendiceal abscesses and gangrene of the lung.

At this point, the cortex was incised further and a small amount of cerebellar tissue aspirated away. With the aid of a narrow ribbon retractor the capsule of the abscess

was found fully four cms. beneath the cortex and rather medially toward the midline, not laterally toward the right mastoid area as one might suspect provided the abscess had come from the ear. In all about forty cc. of creamy, yellow pus was met with and aspirated away. Generous cultures and smears were made and several biopsies taken from the capsule of the abscess, as we were not certain at the time that it might not have been a metastatic lesion. Occasionally at the time of craniotomy what is called a purulent abscess is really "cancer milk" from a metastatic lesion. We have seen this in the cerebellum.

The abscess was thoroughly evacuated with a metal suction apparatus and the capsule held apart with two narrow retractors. The area was irrigated with weak penicillin solution. A French catheter, number twelve, was introduced into what remained of the capsule and brought out through the right cerebellar hemisphere to be sutured to the skin with a single silk suture, along the line of scalp incision. The patient tolerated the procedure quite well but did not do as satisfactorily post-operatively as one might expect.

In the first few days post-operatively he continued to have marked dysarthria, he was a little irrational at times and his blood pressure although somewhat reduced, continued around 180/110 for the most part. Six days after operation the drain in the abscess was shortened and his general condition was then fair. His temperature was normal but he still had occasional nausea and was apathetic. At this time on the basis of his having a nocardia fungus infestation he was given large doses of sulfadiazine, as much as five grams intravenously, daily. An effort was made to keep the blood level of this drug between ten and twenty mgs. per hundred cc. It was also suggested that he take sulfadiazine for a period of from three to six months post-operatively.

Twenty-four days post-operatively on September 28 a note was made that his condition was only fair. He was taking sul-

fadiazine and penicillin daily since the operation and the wound was still draining rather profusely through the upper end of the incision. He also had a fair amount of fever with occasional spikes to 103 degrees. His cerebation also was not too accurate and he seemed restless. There was a tendency for him to pull off his head dressing. His optic disks at this time were well outlined as usual. The patient had had no headache, nausea or vomiting for two weeks. His blood pressure which had been dangerously high on admission, in the neighborhood of 230/170, had now dropped to normal limits, but he was on anti-hypertension medication at the time. The dysarthria, although present, was considerably improved.

From this summary, twenty-four days post-operatively, it can be seen that he was in fair condition but not entirely satisfactory, having a profusely draining wound with occasional marked temperature elevation and some dysarthria as well as mental confusion.

On October 4, 1961, exactly one month post-operatively, it was stated on the record that he was improved in some ways, in others not. The double vision had disappeared as had the nystagmus. He walked about his room with the help of a cane, falling somewhat to the right. His wound was still draining fairly profusely through the old drainage tract in the cerebellar incision. He had been on sulfadiazine and penicillin for one month daily since the original surgical drainage of the abscess. There was no headache or vomiting, although an occasional spike of temperature continued. He seemed disoriented at times. There was very little dysarthria at this time.

It was thought necessary therefore to attempt to remove the abscess entirely from the right cerebellar hemisphere in order to allow the wound to heal completely. It was expected thereafter that more rapid and complete recovery might ensue.

Accordingly on October 5, 1961, the old wound was reopened under endotracheal anesthesia. The old sinus tract was excised.

The superficial cerebellar cortex was aspirated away with a glass suction apparatus, and soon the pale wrinkled capsule of the abscess was encountered rather deeply in the right cerebellar hemisphere. By carefully placing cotton around the abscess itself, and its capsule particularly, the entire mass was eventually delivered in two large portions by gentle traction on hemostats applied to the abscess wall. (Fig. 5) At no time was bleeding excessive although the abscess was quite deep and its main point of connection seemed to extend over toward the right ear, although we assumed the lesion was of hematogenous rather than otogenic origin.

Closure was made with interrupted catgut sutures in the galea with two large soft



Fig. 3. Post-operative AP plain x-ray film of the skull denoting the area of bone removal, particularly on the right side, through which the cerebellar abscess was eventually removed.

rubber tissue drains inserted, one down in the cavity remaining after the abscess was removed from the depths of the right cerebellar hemisphere, and the other in the muscles just above the surface of the cerebellum. (Fig. 3) These were removed slowly over the course of the next three weeks.

The patient's recovery thereafter was rapid

and complete. His temperature reached normal on the third post-operative day and remained so for the rest of his hospital stay (twenty-five days). The dysarthria, ataxia and draining wound all disappeared over the course of the next two weeks.

The final diagnosis was ramibacterium pseudoramosum abscess of the right cerebellar hemisphere, presumably "metastatic" from a long-standing osteomyelitis of the femur. (See addition to the history below.) Pathologic examination of the removed abscess wall from the microscopic standpoint showed only a few fragments of recognizable cerebellar parenchyma attached to the abscess wall. The greater portion of the submitted tissue was composed of granulation tissue with a heavy infiltration of acute and chronic inflammatory cells. Polymorphonuclear leukocytes and plasma cells predominated. No fungi were seen with special stains. The surgical pathological diagnosis was abscess of the cerebellum.

The final very belated albeit accurate clue to the actual course of events pathologically, the patient's cerebration never being too reliable until he left the hospital to convalesce further at home, was made on October 21, 1961, sixteen days after the second operation at which time the entire capsule of the abscess had been removed.

At this time, his mental condition was much better and he recited for the first time a long history of an infection of the left femur (Fig. 4) which had begun in 1920 when at the age of fourteen he had an osteomyelitis of the left femur drained surgically. In 1937 it was drained again through an "incision and drainage" with severe infection in the left femur, after his leg had been injured by a blow while at work. He stated that eight months before being admitted to the hospital for his present surgery, he had again injured his left leg. It had been struck sharply by a tire iron and became "black and blue". It is felt that this recurrent trauma to an old smoldering osteomyelitis of the left femur, eventually caused the blood borne cerebellar abscess in the

right cerebellar hemisphere. X-ray films of the left femur showed marked bony sclerosis with inner dispersed areas of relative radiolucency (Fig. 4). The findings were compatible with long-standing osteomyelitis with considerable overgrowth of bone. Ac-



Fig. 4. X-ray film of the left femur denoting the long standing and extensive osteomyelitis of that bone (41 years' duration) from which the cerebellar abscess probably originated.

tual sequestra were not seen on the films. Some of the areas of radiolucency could well represent the site of continued activity.

It was stated one week after the second operation (October 12) that he seemed to be an "entirely different person" as he was very relaxed, calm and oriented. His tem-

perature was normal and his blood pressure had dropped sharply to normal levels of 110 to 120 systolic over 80 to 90 diastolic. This therefore seemed to be an interesting example of an extremely high and dangerous vascular hypertension incident to very high increased intracranial pressure of considerable duration. It should be said though, to complete the blood pressure record of this patient, that although it dropped to a very satisfactory level, almost hypotensive in the immediate two weeks post-operatively (second-stage), it had begun to climb again and had reached 180/110 on several occasions before discharge on October 30, 1961. Apparently the patient does have some type of vascular hypertension of the chronic variety, not entirely related to the large abscess he had in the right cerebellar hemisphere.

On the day before discharge, October 29, neurological examination suggested no gross deficit. The pupils were equal, and the optic disks were well outlined. There was some nystagmus present in looking to the right. There was slight ataxia in the heel-to-shin test on the right side. He was slightly unsteady in standing in the Romberg position with his eyes closed. His motor power was unimpaired bilaterally. There was an equivocal Babinski on the right side, but no ankle clonus. He had lost twenty-seven pounds in weight during his hospital period. His temperature, pulse and respiration were normal. He was discharged on anti-biotic therapy.

The patient was seen at a follow-up examination in the office on November 16, 1961 approximately six weeks after complete removal of the abscess, and his general condition was excellent. He was ambulatory without need for assistance in walking. His pupils were equal and the optic disks well outlined. He was free of headache, vertigo, diplopia or syncope. There was slight generalized muscular weakness. His operative wound over the cerebellum had healed very well and there was no evidence whatever of any infection from the old osteomyelitis of the left femur, or of any other abscess intracranially.

His blood pressure, however, was again elevated to 190/120, which required anti-hypertensive therapy by his family physician. There was also persistent nystagmus in looking to the right, which is probably attributable to the long-standing abscess in the right cerebellar hemisphere and not to active cerebellar disease. His general appear-

cal finding of any kind so far as his family physician could detect.

Summary

The unusual case of a right-sided cerebellar abscess removed in a two-stage operation that originated apparently from an old osteomyelitis of the femur is described. It was

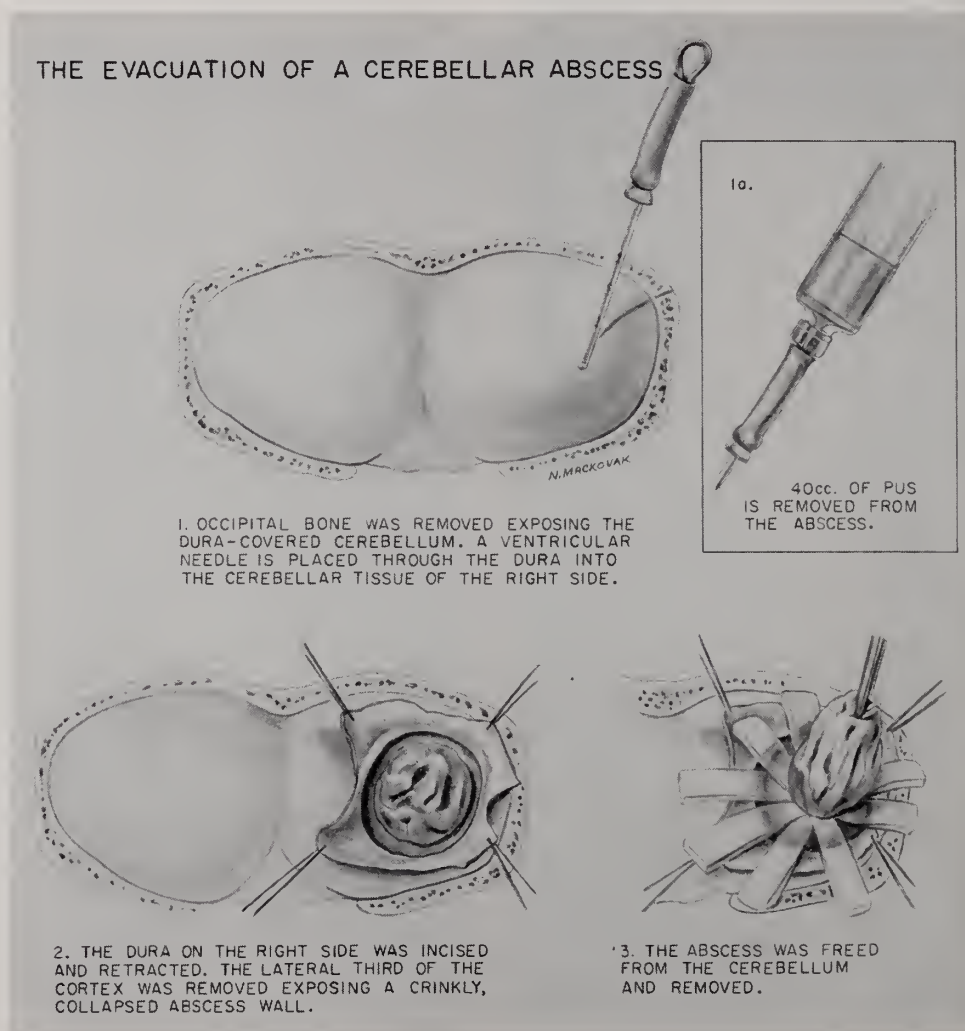


Fig. 5. Artist's drawing of the right cerebellar abscess being removed in two stages.

ance was very gratifying. A final report on the patient in a telephone conversation with his family physician on May 11, 1962 (approximately seven months after the complete abscess removal) was that he was doing extremely well, was working daily in his tire business, and had no neurological deficit, subjective complaint or objective pathologi-

accompanied by marked vascular hypertension relieved only temporarily but dramatically by the removal of the abscess, in the immediate weeks following the second-stage complete removal of the abscess. The bacteriology of the abscess also was most unusual, finally identified as due to *ramibacterium pseudoramosum*, ordinarily an intes-

tinal saprophyte, but apparently coming in this instance from an old osteomyelitis of the femur. The patient eventually recovered and returned to work after a somewhat lengthy convalescence. He was indeed fortunate that only a single distant intracranial abscess from this source (osteomyelitis of the femur) apparently developed. The complete absence of choked disks at all times with such a large, chronic mass lesion of the cerebellum with severe dysarthria, vomiting, headache and diplopia, and with such typical ventriculographic findings of marked internal hydrocephalus, was also unusual, especially as the lesion was accompanied by and associated with a very high spinal fluid pressure.

The case also demonstrates the wisdom of early tapping of the cerebellar hemispheres through a small nick in the dura in such problem cases before the dura is widely opened. Had this not been done, meningitis from the unusual organism demonstrated in this patient might easily have resulted if the

abscess had first been encountered and surgically attacked with the dura already widely opened.

A final rarity of the case is the method of surgical management of the lesion itself. Cerebellar abscesses in children from a mastoid infection (by far the largest group of these lesions we have seen in our clinic) usually respond to simple tapping with a ventricular needle and catheter drainage. This method ordinarily suffices to effect a rapid and complete cure, without having to resort to a second stage more radical complete removal of the abscess wall itself. Although complete removal of *cerebral* abscesses today with the aid of massive antibiotic therapy is rather commonplace, complete removal of *cerebellar* abscesses is rather infrequently performed. It was the first instance in the writer's experience in which it was necessary to effect a complete cure.

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Effects of the New Drug Law

The physician's freedom to prescribe may be further curtailed if effective drugs are unjustifiably withheld from the market, or pressures mount for him to prescribe by generic name. Furthermore, the governmental insistence upon detailed directions for use to accompany all prescription drugs and all promotional material for them increases the risks of malpractice suits if the practicing physician follows his judgment and deviates from dosage or use directions. Clinical investigators may be driven into other fields of research where there is less red tape, thus further slowing down the march of new medicines to the prescription counter. Also, the physician's confidential relationship with a patient is in danger of invasion by the detailed reporting now required and the new authority given the Food and Drug Administration to examine clinical records.—Austin Smith, M.D., President, Pharmaceutical Manufacturers Association, in *New Physician*, May 1963.

Congenital Glaucoma, Juvenile Glaucoma, Chronic Simple Glaucoma All in One Family

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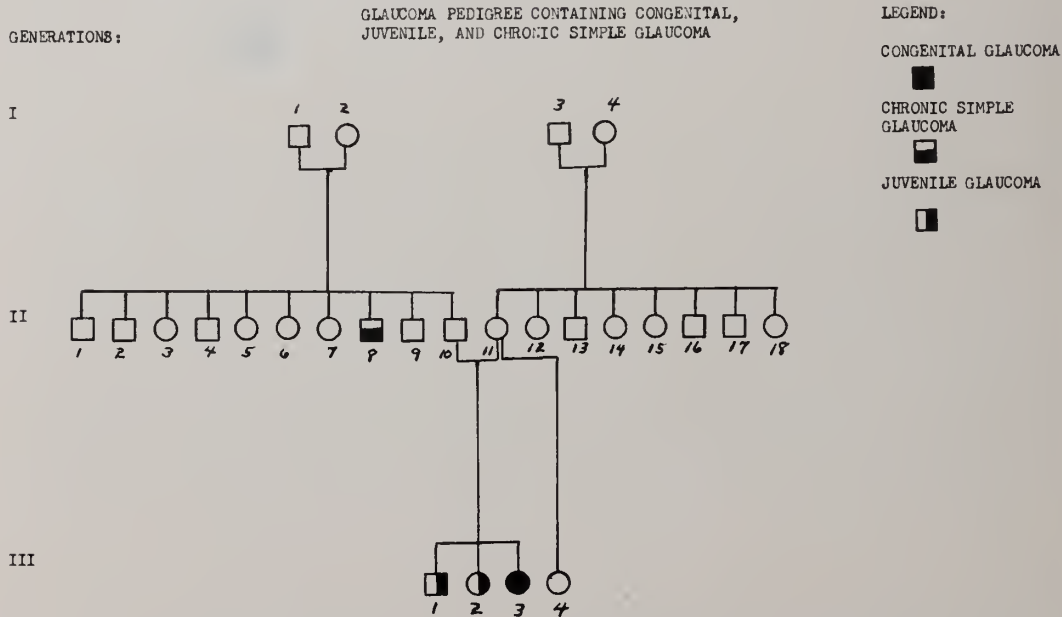
It is unusual that three types of glaucoma, all thought to be inherited, should appear in one family.

CONGENITAL GLAUCOMA follows an autosomal, monomeric recessive inheritance which is sex controlled with variable penetrance according to most authors. François bases this upon the following: (1) This mode of transmission has been demon-

are higher in frequency than cases occurring in families because of a recessive heredity, lack of penetrance, mutations, relative rareness of the gene in question and the existence of phenocopies.

Juvenile glaucoma according to most authors shows a dominant mode of inheritance usually regular but sometimes irregular. However, some authors have reported families with a recessive mode of inheritance.

Chronic simple glaucoma and congestive or narrow angle glaucoma may be inherited also through a dominant mode of inheritance according to most of the pedigrees published so far. A recessive mode of inheritance has been recorded also.



strated in rabbits with hydrophthalmia; (2) Consanguinity is frequent in parents of congenital glaucoma patients; (3) There are numerous examples in which several members of the same sibship are affected, where the parents are normal; (4) Sporadic cases

Most authors have found in the past that glaucoma in a family is usually of the same type. Posner and Schlossman in 1949 and Weekers in 1955 stressed this view. However, there have been instances in which different types of glaucoma have been reported in the

same family. Simple glaucoma and congestive glaucoma have been reported in the same family. I. Biro in 1956 reported a family with hydrophthalmus, juvenile glaucoma, narrow angle glaucoma and chronic simple glaucoma in the same pedigree.

The purpose of this paper is to present a family with three types of glaucoma. A couple with normal eyes are presented who had three children who have all developed glaucoma. One sibling was born with typical congenital glaucoma. The other two siblings developed juvenile glaucoma, if we define juvenile glaucoma as that type developing after three to six years of age. In addition to these three siblings, a paternal uncle has had chronic simple glaucoma which had its onset at age fifty-five. The parents of the three sibs showed no consanguinity and their eyes were normal phenotypically. They had normal facilities of outflow and their gonioscopic pictures were normal. In this pedigree the technique used for members of the family other than the parents of the affected siblings and the four members affected with glaucoma was just the Schiotz tonometer and ophthalmoscopy.

Following is a description of the affected cases and the parents of the affected siblings:

Case #11, Generation II. Mrs. N.L. was a 46-year-old white female who was the mother of three siblings with glaucoma. She had had a daughter by a previous marriage who did not have glaucoma. She had a negative family history for glaucoma.

Ophthalmic examination revealed a visual acuity of 20/20 bilaterally without glasses. External examination of the eyes was normal and revealed pupils which were equal in size and normally reactive. The ocular rotations were full and no deviations were noted. The intraocular tensions per Schiotz were 17.3 mm.Hg bilaterally. Ophthalmoscopy revealed normal discs bilaterally and normal fundi also. Visual fields were normal with use of the 1 mm. white test object at 1,000 mm. Tonography revealed a facility of outflow of 0.35 in the right eye and 0.30 in the left eye. Gonioscopy of both eyes showed a normal

angle bilaterally which was very wide. The corneal diameters were 11.5 mm. bilaterally horizontally.

Case #10, Generation II. Mr. D. L. was a 54-year-old white male who was the father of three children with glaucoma. This patient had thirteen brothers and sisters and one of his brothers had glaucoma. This patient developed an exotropia at a very early age with an amblyopic left eye. On December 28, 1950, this patient had muscle surgery to attempt to correct his exotropia. At this time his intraocular tensions per Schiotz were normal bilaterally. On June 7, 1951, this patient again had muscle surgery for a residual exotropia. This patient was first seen by us on September 27, 1960. Ophthalmic examination at that time revealed a slight exotropia of the left eye. The visual acuity was 20/20 in the right eye and 20/200 in the left eye with best correction. Except for the exotropia, the external examination of the eyes was normal. The corneal diameters were 11.5 mm. horizontal bilaterally. Ophthalmoscopy revealed normal discs and fundi bilaterally. Intraocular tensions were 5 units with the 5 gm. weight Schiotz bilaterally. Tonography showed facilities of outflow of 0.35 in both eyes. Gonioscopy of both eyes showed normal open angles bilaterally.

Case #2, Generation III. M. N. L. was a 15-year-old white female who was first seen in the University of Alabama Eye Clinic on September 30, 1959, with the history that her brother and sister had glaucoma but she was asymptomatic herself. Ophthalmic examination revealed a visual acuity at that time of 20/15 bilaterally without glasses. Her corneal diameters measured 12.0 mm. in her right eye and 12.4 mm. in her left eye. Ophthalmoscopy showed a normal fundus in the right eye and a normal disc. The disc in the left eye was slightly cupped but the fundus was normal. The intraocular tensions were measured with the Schiotz tonometer as being 25.4 mm. with the 7.5 gram weight in the right eye and 25.4 with the 7.5 gram weight in the left eye. Gonioscopy revealed both anterior chambers to be deep

with clear corneas. In both eyes, Schwalbe's line could be seen all around and the angles were open very wide. However, it was noted in both eyes that iris processes ran up over the surface of the trabecular spaces almost to the lower edge of Schwalbe's line. There

for slight enlargement of the blind spot in the left eye. Tonography revealed a facility of outflow of 0.13 in the right eye and a facility of outflow of 0.10 in the left eye. Since this initial workup, this patient has continued to have abnormally high intra-



Case #2, Generation III. M.N.L. was a 15-year-old white female who had juvenile glaucoma. Her corneal diameters measured 12 mm. in her right eye and 12.4 mm. in her left eye.

was just a thin linear area of trabeculum not covered with this anterior extension of the iris processes. This was true in both eyes. The ciliary bodies or Schlemm's canal were

ocular pressures bilaterally and has continued to have an abnormal facility of outflow bilaterally. Her fields have remained essentially the same.



Case #1, Generation III. N.L. was a 17-year-old white male whose glaucoma was first diagnosed at age 6. His corneal diameters were 13.0 mm. in the right eye and 13.5 mm. in the left eye.

not seen in either eye. No peripheral anterior synechiae were noted in either eye. Applanation tonometer readings revealed a tension of 21 mm. in the right eye and 26 mm. in the left eye. Visual fields were normal with a 1 mm. white test object at one meter except

Case #1, Generation III. N. L. was a 17-year-old white male who at the time of this examination was attending a state school for the visually handicapped. This patient was first seen in the University of Alabama Eye Clinic on January 10, 1951, at age

seven. Ophthalmic examination at this time showed an intraocular tension of 55 mm. Schiötz in the right eye and 42 mm. Schiötz in the left eye. Visual acuity at that time was 20/60 in the right eye and 20/20 in the left eye without glasses. Both discs showed glaucomatous cupping. The corneal diameters measured 12.5 mm. in the left eye and 12.0 mm. in the right eye. However, this patient had had surgery previously for glaucoma elsewhere. The diagnosis was first made in early 1950 and on February 2, 1950, he had had an Elliott trephine in the left eye and on February 9, 1950, he had had an Elliott trephine in the right eye. Both of these procedures failed to normalize the

and was unable to be done in the left eye. The facility of outflow in the right eye was 0.08 and the facility of outflow in the left eye was 0.02 at this time. Gonioscopic examination on many occasions revealed that both angles had an anterior extension of the iris processes up over the surface of the trabecular spaces. Schwalbe's line could be seen in both eyes but only a thin line of trabeculum was not covered by the abnormal extension of the irides. Many peripheral anterior synechiae were noted in both eyes due to the repeated surgical procedures performed on this patient. In addition about one year previously (August 1960), this patient had become hyperthyroid and re-



Case #3, Generation III. B.L. was a 14-year-old white female who was born with unocular congenital glaucoma. Her corneal diameter measured 13 mm. and the corneal diameter in the left eye measured 15 mm.

intraocular pressures in this patient and in the following ten years, he was subjected to multiple surgical procedures bilaterally and to intensive medical treatment for his glaucoma. In spite of these efforts, his vision gradually decreased.

On September 15, 1961, his corneal diameters were right eye 13.0 mm. and his left eye was 13.5 mm. His visual acuity in his right eye was 20/30 with glasses and only light perception in his left eye. The intraocular tensions were 23 mm. Schiötz in the right eye and 31 mm. Schiötz in the left eye with the patient under heavy medical treatment. The visual fields were reduced to about 8 to 10 degrees in the right eye

quired a thyroidectomy to control his thyrotoxicosis. In addition he had developed slight exophthalmus bilaterally.

Case #3, Generation III. B. L. was a 14-year-old white female who was first seen in the University of Alabama Eye Clinic on February 22, 1950, with the diagnosis of congenital glaucoma having been made at birth. She had already had surgery to the left eye elsewhere in September of 1949. Her history revealed that she had been born with large eyes. The left eye was much larger than the right eye at birth. On the first examination, her corneal diameters measured 12.0 mm. in the right eye and 12.5 mm. in the left eye. The intraocular

tensions were 25 mm. Schiötz in the right eye and 35 mm. Schiötz in the left eye under general anesthesia. Goniotomies were done bilaterally shortly thereafter. Repeated gonioscopic examination of both eyes have shown the angles to be very wide bilaterally. Both anterior chambers were very deep. Schwalbe's line could be seen all around bilaterally and the irides ran forward over the surface of the trabecular spaces in both eyes. Only a thin line of trabeculum was left uncovered by this anterior extension of the irides. The ciliary body or Schlemm's canal were never visualized on these gonioscopic examinations. The left cornea showed typical breaks in Decemet's membrane when this patient was first examined. The disc was cupped. The right disc and fundus were normal.

During the ensuing years, this patient had repeated surgical attempts on the left eye to normalize the intraocular tension to no avail.

On September 27, 1961, the visual acuity was 20/20 without correction in the right eye and no light perception in the left eye. The corneal diameter horizontally in the right eye was 13 mm. and the corneal diameter in the left eye was 15 mm. Tonography revealed a facility of outflow in the right eye of 0.10 and 0.05 in the left eye. Fundoscopy on repeated occasions had shown a huge cupped atrophic disc in the left eye while the right disc had also become cupped with a normal fundus otherwise. The disc in the right eye also showed nasal displacement of the vessels. On marked medical therapy, the intraocular tensions Schiötz were 20 mm. in the right eye and 23 mm. in the left eye. The visual field in the right eye was full with a 1 mm. white test object at one meter but the blind spot showed some enlargement.

Case #8, Generation II. R. L. was a 61-year-old white male who was the paternal uncle of the three siblings described above with glaucoma. He had had the left eye enucleated due to trauma as a child. The left globe was ruptured with a blow from

a stick. This patient was examined by his private ophthalmologist on June 8, 1950, at age fifty and the visual acuity in the right eye was 20/20 without glasses. The intraocular tension was normal and the fundus was examined and found to be normal. His next visit to his ophthalmologist was on March 11, 1955. At that time, his visual acuity was 20/20 in the right eye with correction of +1.25 sphere combined with -0.25 cylinder axis 128. However, the intraocular tension Schiötz was 30 mm. Hg. Fundoscopy revealed some cupping of the disc with a normal fundus otherwise. A diagnosis of chronic simple glaucoma was made. The visual field on the right eye showed some peripheral constriction of the field and enlargement of the blind spot. The patient was placed on medical therapy at this time. In spite of this medical therapy, by February 28, 1956, this patient had a visual field in the right eye of about 15 degrees and an intraocular tension of 35 mm. Hg. Schiötz under treatment. At this time, an Elliott trephine was performed on the right eye. This operation failed to control the intraocular tension in the right eye so on April 27, 1956, he had an iridencleisis done on the right eye. In spite of medical therapy and the operative treatment, this patient continued to have an elevated intraocular tension and to lose visual acuity in the right eye. By June 29, 1956, the right eye had a visual acuity of no light perception.

On July 15, 1961, this patient was examined. He had a prosthesis in the left lids and his visual acuity in the right eye was no light perception. The corneal diameter in the right eye horizontally was 11.5 mm. The cornea was clear and the anterior chamber was deep. There was a large basal iridectomy at twelve o'clock and the lens was cataractous. The fundus was not visible due to the cataract. The intraocular tension Schiötz of the right eye was 17 mm. Hg. Gonioscopy was attempted but although the anterior chamber was deep there were many peripheral anterior synechiae in the angle of

the right eye so that the angle was obscured and obliterated by the synechiae. This patient had also been diagnosed as having diabetes mellitus in April 1955.

Discussion

This family raises a question in the heredity of glaucoma which has not been completely answered. Does a single genotype give rise to different phenotypes? In this pedigree, we have one patient with obvious congenital glaucoma since birth. Two other patients may be said to have a diagnosis of juvenile glaucoma according to the usual definition of this somewhat vague entity. The fourth patient could be diagnosed as having chronic simple glaucoma although gonioscopic examination was not adequate during the inception of the disease.

In the case of the three siblings presented in this paper, it is probable that their parents are heterozygotes for congenital glaucoma. The two patients with so called juvenile glaucoma are probably just cases of congenital glaucoma which have had a late onset. The gonioscopic picture of all three would support this view. However, the case of glaucoma in the paternal uncle could not be explained on this assumption. Was his glaucoma due to the same gene as that of the siblings? Or was his glaucoma due to an entirely different gene? Also, his glaucoma could have been of a secondary type although the evidence indicates that it was chronic simple glaucoma.

Several authors have recorded families with different types of glaucoma. (Berg, Lohlein, Korte, Westerlund, Derby, Pimentel, Weekers and Biro)

Summary

A family is presented which showed four cases of glaucoma. One case was congenital glaucoma and two cases were of the juvenile type. The fourth case was of the primary glaucoma type probably chronic simple glaucoma. A pedigree of this family was presented.

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Ice Cream Headache

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Study of the familiar "ice cream headache" may lead to a better understanding of vascular headaches.

SEVERAL YEARS AGO I was one of a group of doctors who were hopefully probing the subject of headache at an "Academy" meeting. The question was asked how many of us had experienced "ice cream headache". The responses, "yes" and "no", were evenly divided. The chance that half of us may be relatively immune to this common complaint has always seemed to me both intriguing and challenging.

Wolff¹ described some experimental studies on the subject. He concluded that "ice cream headache" was an example of referred pain, but did not suggest that it had other significance.

My first experiment developed spontaneously on a humid summer day in 1962. The temperature was in the 90's, and I perspired moderately as I ate a standard "double dip" ice cream cone. Before long I felt a typical pain in the right temporo-frontal region. I noted, subsequently, that the palatal area, where one commonly savors food, was markedly chilled.

There may be a natural inclination to resume eating ice cream prematurely, before the palatal chill has moderated. On this occasion, I did so deliberately, again and again. As soon as the pain had subsided, I

would take a small amount of ice cream and hold it against the right side of the palate. I found that the temporal pain returned promptly and invariably, and that a surprisingly short interval (perhaps two to four seconds) separated stimulation and the rhythmic response.

In January, 1963, I became more actively interested in this problem, and made several attempts to reproduce the pain. It is noteworthy that these later experiments were carried out under a very different set of conditions. The outdoor temperatures, for example, varied from zero to 15° F.

On January 26th, I ate a pint of ice cream as rapidly as possible. The temperature of the room was near freezing. I tried to keep the ice cream on the right side, so as to intensify the cold effect. Although the palate was cold, the sensation was never extreme, and the maximal chilling was difficult to maintain. There was no headache, but only a slight sensation of tightness in the right anterior temporal region. This was constant and could well have been fortuitous.

On January 27th, after a hot bath and with a room temperature above 70° F, I ate a pint of ice cream much as before. The experiment was prolonged by holding cracked ice against the right side of the palate continuously for one hour. There was moderate chilling of the tongue and palate plus some local discomfort where pressure of the ice was greatest. No other effect was noted except a faint, inconclusive feeling of temporal tightness.

The next test was designed to observe the effect of ice cream at its lowest practical temperature. On January 30th, in a room at 40° F, I ate a pint of ice cream taken directly from a deep freezing unit. Every

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effort was made to intensify the cold effect by holding the ice cream in contact with the right side of the palate. There was sometimes a brief sensation of discomfort in the mouth, locally, but no headache.

Obviously, a logical explanation of these findings and of ice cream headache should be based on the known effects of cold and should be compatible with our knowledge of pain. In Wolff's discussion of the role of cold in the production of pain, he uses the general term, "noxious stimulation". This usage suggests the formation and disappearance of toxic metabolites within the tissues. A process of this type seems inconsistent with the rapid onset and relief of pain which I noted in my first experiment. The true mechanism is likely to be something much simpler and more direct.

Bayliss² made this statement many years ago, "one of the means adopted to counteract cold is the constriction of the blood vessels of the skin." The reaction of blood vessels to cold is a protective function, and it is therefore reasonable that it should vary according to the needs of the organism. During my cold weather experiments, the maximum sensation of cold was difficult to achieve and was transitory. This suggested a tendency of the blood vessels to open up, thus permitting an increase in the blood flow. In contrast, while the sensation of cold observed in the summer time may have been less extreme than I judged it to be, its constancy was proof of severe vasoconstriction.

Here we have to deal with a vascular reaction (a primary constriction) initiated by cold and associated with pain in a different, but not distant, area. Vasoconstriction, however, does not cause pain, as far as we know. Thus, we may expect to find a significant, concomitant vasodilatation (which Wolff has found to be an adequate stimulus for head pain). The problem, actually, is not so much whether vasodilatation occurs, but, rather, what conditions must prevail in order to precipitate headache.

Ice cream headache, it seems, develops

more readily in summer than in winter. There may be many etiologic considerations which could explain this tendency, but I will suggest only three. First, in a cold environment, the palatal vessels may be more readily opened because it is desirable to prevent chilling. Second, in very warm weather, there may be a generalized dilatation of superficial vessels, in order to transfer body heat to the environment. And, third, an increased flow of blood to the oral area may be a specialized reaction to excessive external heat and humidity. Whether or not this last mechanism is a human physiological adaptation for temperature control (as it is in the dog), something like it would help to explain why the victim returns so readily to his ice cream, at the risk of further pain. One point in any case is obvious: no matter what other factors may produce or contribute to vasodilatation, we must conclude that the stretching of the vessel wall and pain will both be directly proportional not only to (A) the proximal primary thrust of the blood column but also to (B) the peripheral resistance to blood flow (vasoconstriction).

The clinical importance of ice cream headache is probably zero, since the reaction has little or no emotional content, and is self-limited in the purest sense. However, if it should prove to be pain of vasodilatation secondary to distal vasoconstriction, the theoretical implications may be of practical concern. If we permit ourselves to concentrate too closely on what may be a secondary phenomenon of vascular headache (dilatation), even if it is the factor for pain, we will never see the forest because of the trees. In fact, it may be relatively unimportant (except to the pharmaceutical industry) whether the primary physical reaction, itself, is subject to direct chemotherapeutic attack; but, when it is recognized for what it is, we will be more free to devote ourselves to the underlying emotional difficulty.

Ice cream headache may be easily reproduced, and the experience is common to

many of us. These advantages should help the investigator. Although a suitable technique must be worked out, it is possible that further study may yield precise knowledge of fundamental significance. Instead of being some simple referred pain, this familiar experience may be the prototype of vascular headache.

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Government Role in Drug Safety

We must consider drug safety not as an aftermath to tragedy, but as an integral element of our scientific advance. We must be carefully safe, but we can never be absolutely safe. There will always be risk attendant on the acquisition of new knowledge and its application. To me, the future calls for a greater emphasis on the ways and means whereby results of our enormous investment in health research can be applied for the betterment of mankind. And in the final analysis, we must recognize that the government's role is that of legal guardian, and that the creative forces on which our hopes for improvement of this human condition rest, lie outside, in the main, of this limited circle of legal responsibilities.—Lowell T. Coggeshall, M.D., to Senate Subcommittee on Reorganization and International Organizations, June 19, 1963.

An Unusual Case of Rupture of the Spleen

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A case of rupture of the spleen following a relatively minor fall is reported.

AN 86-YEAR-OLD-WHITE FEMALE was admitted to the hospital on February 27, 1961, complaining of acute right lower quadrant abdominal pain accompanied by vomiting. Her family said that sometime near midnight while on the way to the bathroom in her home, she apparently slipped and fell on the buttocks. About one-half hour after falling, the patient developed nausea and vomiting and had vomited twice before admission to the hospital. The patient was irrational, restless, and uncooperative, probably due to the pain and senility. In addition to the above symptoms she complained of pain in the left shoulder but no injuries were found in this area. No history of rectal or vaginal bleeding was noted. She stated that she was able to void after the accident and no abnormalities were seen in the urine.

Physical Examination

The physical examination disclosed a somewhat fatigued, distressed and confused elderly woman with an oral temperature of 100.° The entire abdomen was distended; there was marked localized tenderness in the right lower quadrant of the abdomen. The vomits were fecaloid in type with a peculiar, strong odor. There was also found an old operative scar, sub-umbilical on the midline. The family said that the patient had surgery 40 years ago but they didn't know

for what. Palpation of the abdomen revealed that the liver and spleen were not palpable. No injuries or bruises were noted on the abdomen. The inguinal rings were normal. Percussion of the abdomen revealed some dullness of lower quadrants of the abdomen and hypogastrium. Auscultation of abdomen revealed occasional distant and vague peristalsis. The rectal examination showed no bleeding, strictures or masses. The pelvic examination was not satisfactory due to abdominal pain and distention but it was questionable whether the uterus was present. There was remarkable pain in the Douglas sac. Obviously a fall in an elderly woman brings suspicion of some pathology in the skeletal system. However, on careful examination of the pelvis and femoral bones, no abnormalities were noted. The chest was normal. The heart revealed a blowing systolic murmur on the apex. No extrasystoles. Blood pressure was 110/80. The pulse was regular, 120 per minute. The reflexes were normal. There was a remarkable senile arch in both eyes. The mouth was edentulous with a dry, coated tongue.

My clinical impression was an intestinal obstruction with possible perforation in the G.I. tract. A member of the hospital surgical staff examined the patient in consultation and agreed with a diagnosis of a surgical abdomen.

Complimentary Studies

The blood count showed 51% hemoglobin, 2,800,000 red blood cells, 9,600 white blood cells. The blood urea was 24. Catheterized urine specimen was negative. X-ray of abdomen revealed moderate dilatation of the small bowels. No fluid levels were in evidence in an upright roentgenogram.

Course of Disease and Treatment

This patient was severely dehydrated. Fluids were administered intravenously. Glucose 10% in water—2000 c.c. was given. 75 mg. of Demerol was administered i.m. Later Sparine 25 mg. was given every four hours p.r.n. for restlessness. In view of the blood picture, blood type and cross match were ordered and two pints of blood were given without difficulty which improved the condition of this patient for emergency surgery. Under spinal anesthesia using 6 mg. of Pontocaine, fluids running intravenously and plenty of blood available, a right paramedian incision was made. This type of incision was made because most of the pain and complaints were on the right side. Surprisingly a considerable amount of blood was found in the abdominal cavity and suction was started. A thorough and systematic exploration of the entire abdominal cavity was made and it was confirmed that the uterus and appendix had been removed on previous surgery. No pathology was noted in the gallbladder, stomach or bowels. The pylora and the anterior and posterior wall of the stomach were normal. While searching for the bleeding, the bowels were retracted to the right side and then a stream of blood was noted coming from the upper left part of the abdomen. The incision was enlarged to the left for better exposure, revealing a large rupture of the spleen at the level of the hilum. In order to get a good exposure of the pedicle it was necessary to cut the gastro-splenic omentum and the vasa brevia were divided; using double ligature (black silk 00) the splenic vessels were secured and splenectomy was done. Pathological report was consistent with rupture of the spleen. The abdomen was closed routinely. The patient left the operating room in fair condition. Fluids were continued intravenously. One pint of blood was given during the operative procedure and one pint of blood was given the following day. The post-operative course was stormy for the first three days due to the patient's advanced senility. Urinalysis was negative

and the hemoglobin rose to 70%. The abdomen was soft and the general condition was satisfactory. The bowels were open. On the eighth day the operative wound was well healed and stitches were removed. On the tenth day following surgery the patient developed an acute heart failure with auricular fibrillation. The blood urea was 60 mg. The patient was digitalized and in spite of vigorous therapy expired on the twelfth post-surgical day. Cause of death was acute heart failure.

Conclusion

A case of an acute abdomen in an elderly woman has been discussed. In automobile accidents or indirect blows to the thoraco-abdominal regions, the rupture of the spleen is quite common. However, in indirect and apparently insignificant injuries such as was mentioned in this case, as a rule the clinician would not think of the ruptured spleen being responsible for the abdominal drama. In tropical regions where malaria is endemic and consequently the pathology of the spleen is quite common, the surgeon is more aware of internal bleeding from the spleen. There have been several cases reported in the United States of spontaneous rupture of the spleen of patients suffering from infectious mononucleosis. Tartaglia has reported three cases of rupture of the spleen in patients with acute leukemia; the mechanics of the splenic rupture in these cases are unknown. The ruptures occurred while patients were in bed (New England Journal of Medicine, July 5, 1962, page 31). In reviewing the symptomatology of this particular case, there was only one symptom, namely the pain in the left shoulder which would suggest rupture of the spleen. This was due to the extravasation of blood in the peritoneal cavity making pressure on the left diaphragm. Finally, it is necessary to think in terms of the spleen being the most fragile viscera of the body and the most vulnerable.

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The Physician and Radiation Fallout

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In the event of atomic war the physician's duty will be not only to serve the sick and injured, but also to survive the war and take part in the work that follows.

THE RECOMMENDATIONS of the International Commission on Radiological Protection suggest that the maximal amount of radiation absorbed during thirteen 40 hour weeks should be 0.3 rem per week which is the equivalent of 306 microroentgens of X or Gamma rays. We know that about 20% of persons exposed to a total body dose of 150 Roentgens(R) will have some form of radiation sickness and that genetic changes will be observable at very much smaller doses than this. During the studies made after the accidental contamination of the Marshallese Islanders on Rongelap Atoll and on the survivors of the Hiroshima and Nagasaki Bombs it was found that 25R (all doses quoted in this article are total body doses in air) can probably be assimilated without impairment of health, (again all doses herein mentioned are acute doses absorbed over a few minutes or hours). At a level of 50R bone marrow changes have been observed in a significant number of persons.

This article is concerned with WAR—a good citizen is one who *survives* and necessarily some of the niceties of behaviour will have to go by the board. It is my feeling that part time survival will be possible outside of a shelter despite surface contamination some 14-21 days after the initial holocaust.

It is the feeling of Behrens and his co-workers that a dosage of 25R can be absorbed at any one period and tolerated without any undue reduction of survival. However after this exposure there should probably be a week's rest from further exposure. Necessarily such an exposure should be acquired by only those persons who have already reproduced or passed the reproductive age as this dose will probably have gonadal effects.

At the same time that we are concerned about acute large body doses we must be concerned with the continuous level of background radiation that might penetrate into a shelter.

The I.C.R.P. recommend that no more than 300 mR/40hr week for a 13 week period be absorbed. In one normal week there are 168 hours. Behrens suggests that it will probably take some 6-8 weeks for outside radiation fallout to decay to this level which would be some 1000 hours. 300mR for a period of thirteen 40-hour weeks is a total of 3900mR or 3.9R and a shelter therefore should have sufficient shielding to keep the intrashelter level to this total during the 6 weeks it will take for the outside level to fall to this figure. Thus in a period of 1000 hours the radiation level in the shelter should be no higher than 3.9mR (milliroentgen) per hour. This article can only concern itself with fallout in what it is hoped will be nontarget areas. Personal shelters could not be built to contain this low a level of radiation in target areas and, in any case, would not withstand the blast.

At ground 0 during the first minute, if a 10 megaton bomb were exploded, there would be a total dose of 1000R in an area of 2.1 miles radius and 30R in an area of 3.1 miles radius and the fallout would then

be distributed as shown in table #1. This area would rapidly become cigar shaped depending upon the prevailing winds.

TABLE No. 1
15 MEGATON BOMB (1 Only)

Time After Burst	Contaminated Area	Average Intensity of Radiation (Gamma Radiation/Hr.)
1 hour	250 sq. miles	2500R/hr
3 hours	1200 sq. miles	200R/hr
6 hours	4000 sq. miles	30R/hr

Probably in the State of Virginia the Western Piedmont in the foothills of the Blue Ridge would be the area with the least fallout. The main targets in and around our State would in all probability be Washington, D.C., Norfolk and Oak Ridge. Behrens estimates that in the areas of actual detonation there would still be activity in the range of 40R/hr at 6 weeks but it would be considerably less where fallout were purely due to airborne contamination and in the Southwestern Virginia area would probably be in the region of 4-5mR at 6 weeks, or possibly less. Within several hours the decay rate after detonation becomes steady and monitoring will soon establish the probable drops to livable levels outside of shelters. When the level is down to 4-5mR outside a shelter it will be perfectly possible to start rebuilding and return to normal duties. To get radiation inside the shelters to a level which will keep exposure to infants and gonads to a minimum, it is necessary that the radiation externally be reduced by a factor of 1000, i.e. that the shelter radiation be 1/1000 of the external level.

According to the studies of Goub et Al 9 main types of shelters are being constructed (see table # 2).

It can be seen from the facts already in evidence that only four of these shelters are suitable and in my own judgement the only type that should be considered to give long term radiation protection is type 6. These shelters are being built only for radiation protection because even the best of them will only take a blast overload of 51b/sq. ft. The other shelters would be

fine IF fallout decay was extremely rapid and complete and lasted only a few hours. However our children and reproductive

TABLE No. 2
Reduction in Outside Radiation

Type of Shelter	Reduction in Outside Radiation
(1) Basement—Sandbags 18" thick walls and roof.....	1/40
(2) Basement—Sandbags 36" thick walls and roof.....	1/1000
(3) Basement—Solid concrete block 8" thick walls and roof.....	1/16
(4) Basement—Solid concrete block 16" thick walls and roof.....	1/200
(5) Basement—Solid concrete block 20" thick walls and roof.....	1/1000
(6) Underground—Reinforced poured concrete 8" walls, 6" roof, 2¼ feet earth.....	1/1000
(7) Garage—Reinforced poured concrete 8" walls, 20" roof.....	1/1000
(8) Aboveground—Double walls 3 feet of earth around and above.....	1/1000
(9) Corrugated steel pipe 7 feet diameter ONLY (larger no stress strength) plus 5 feet of earth.....	1/10000

None of these shelters are blast proof. All shelters should be inspected by a structural engineer before starting building. Do not accept PreFab or Do-It-Yourself shelters advertised in some newspapers and magazines.

Ref.: Garb, Solomon: New York State J. M. 60:3457, Nov. 1, 1960.

persons MUST survive, and survive if possible without genetic damage. Therefore we must reduce radiation by 1000.

The long term health of shelter occupants must be protected. Sewage disposal is best by means of a 15 foot deep hole in one corner of the shelter lined with cement and a sump pump leading outside to drain moisture, putrefaction and odor can be minimised with yeast cakes, lime or any good bactericide.

There must be a supply of uncontaminated water and this is best found by storing water in a 500 gallon tank six feet below ground, adjacent to the shelter, which is filled and drained every two weeks and chlorinated. If possible the tank should be emptied and refilled immediately upon receipt of the Red Alert Conelrad warning as there should be 30-60 minutes before fallout will drift to the Southwestern Virginia area.

Foods should be of the low residue type to keep stools to a minimum and a fecal softener such as Surfak® should be taken

daily. It is best to keep a supply of concentrated foods high in protein such as dried meats and soups in the shelter, tinned and non-perishable goods such as Spam and dried potatoes and the non-cellulose vegetables. Dried milk will provide protein and calories. Everyone should take a multivitamin daily and tranquilizers should be available as some persons will undoubtedly develop claustrophobia. There should be a broad spectrum oral antibiotic such as Panalba or Chloromycetin. Nausea is the first symptom of radiation sickness and there should be an antinauseant such as Tigan or any of the more potent phenothiazine group. Diarrhoea is the next most common symptom and Kaopectate and paregoric is adequate for this. A good topical analgesic for burns should be present.

The shelter should be of sufficient size to give a minimum of 80 cu. ft/person and an optimum of 160 cu. ft.

Ventilation should be at a rate of 6-800 cu ft/min for a 30-person shelter and the intake should have a filtration system to remove particulate matter responsible for fallout, glass wool or a paper automobile filter properly prepared will perform this duty. Ventilation, lighting, heating, dehumidification and cooking will have to be maintained and a small portable propane or diesel operated generator should be available. The fuel for the generator should be stored externally and piped in.

Entrance to the shelter should be via a double right angled passage to scatter radiation and the entrance will have to be sealed with tape and sandbagged as soon as occupied.

Radiocontact with the outside must be maintained and a coaxial cable aerial must be used. Preferably use a short wave "ham" set or otherwise keep tuned to Conelrad.

The physician's Immediate Duty is to SURVIVE and unless he is a member of a specially selected Civil Defense Group who have their own shelter he should go underground at the first warning of danger so that there be medical attention available

after the fallout reduces to levels permitting short exits from the shelter. A physician who stays out in contaminated climate to look after those who cannot or will not go to a shelter is of no value to his country when he is dead—and he will be!

Monitoring of the radiation should be by means of a meter which will read the external atmosphere in the region of 0.01R/hr. to 10R and until this range is reached no-one should venture out of shelter and then only for periods which will not bring the total dose above 25R. Readings are necessary in the shelter in the 0.1 to 50mR range so that the continuous background level can be counted to give the total body exposure in the shelter which has to be added to that exposure received outside the shelter. This smaller range will then be necessary to measure surface contamination after decay below 0.1R as even at this level although the radiation may be undetectable in the shelter it will be too high to permit the continuous exposure of children, pregnant females and adults in the reproductive age groups who may have to spend many hours each day and all of the nights in the shelters for many months after the initial assault.

Shelter groups will need psychological support and would be better off to build shelters in groups rather than single families. They should schedule the day to monitor Conelrad continuously, entertainment should be scheduled, toys should be taken to the shelter for children, there should be curtained off toilet and changing areas. Some form of physical exercise should be provided by the use of graded calisthenics or wall spring exercises. The army 6 Bx plan is suggested.

Radiation Sickness

The physical effects of radiation are limited to the Beta, Gamma and X-Rays produced either directly by the bombs or secondarily to neutron flux. The radiation accounts for 3% of the released energy of the bombs at time of fusion or fission. The Beta rays penetrate only a few mms and are

responsible for burns and other cutaneous lesions mainly. The exposed Marshallese Islanders who acquired total body doses in the regions of 100R had little systemic effects but did have skin burns and alopecia. These burns are accompanied by underlying genetic damage and are slow to heal. They may not show up for several days after exposure and treatment is purely supportive and best by open exposure.

The Gamma and X-rays affect the bone marrow, spleen, liver and Gonads especially.

The first symptoms of systemic poisoning are nausea, vomiting and diarrhea. The onset of these symptoms follows the injury after a variable latent period dependent upon the dose of radiation received. The patients can be broken down into three groups dependent upon the distance from the explosion, the shielding available at time of exposure and the length of latent period before onset of symptoms.

GROUP I

Vomiting occurs within several hours of the bombing and progresses rapidly to prostration accompanied by diarrhoea, anorexia, fever and death within 4-5 days. There is profound depression of all white blood cells within 48 hours.

GROUP II

Vomiting starting on the day of the bombing but subsiding within a few hours, then a latent period of 1-3 weeks followed by purpura, epilation, oral and cutaneous lesions, infection of any wounds present, breakdown of healing burns and a bloody diarrhea. The *UNTREATED mortality* of this group is *HIGH*.

GROUP III

NO vomiting on the day of bombing, transient nausea thereafter. Late symptoms if any similar those in group II. Mortality is low if unaccompanied by burns, trauma or infection. If there is no leukopenia by the tenth day a sublethal dosage may be presumed.

The only useful laboratory tests are the lymphocyte, neutrophile and platelet counts.

For early diagnosis the lymphocyte count is the most sensitive. Small doses of radiation produce a severe depression (25-30R range). Depression below 1000 cells/cu.mm. within 24 hours indicates a severe exposure needing treatment.

The neutrophile count is less sensitive, depression is slow and MAY RISE in the first 48 hours before being depressed. In the lethal range the neutrophile count falls after the initial rise and reaches its lowest level in the first 7-14 days depending upon the total dose received.

The platelet count falls in a regular manner beginning 14 days after exposure and reaching a low at 30 days.

Neutrophile and platelet counts begin to return to normal levels several days after reaching the lowest count but full return to normal may take months on even years. The lymphocyte count return to normality is very markedly delayed.

Therapy

The best therapy is prophylaxis.

1. Get to fallout shelters at first Conelrad warnings.

2. Ensure that all members of one's personal family and all patients are in the maximal physical condition—not just a "satisfactory" condition. Have patient get out in the air and exercise, golfing, walking, climbing, roadwork, calisthenics daily.

3. Eat foods rich in vitamins and proteins and low in fats and carbohydrates and keep weight down to 10% below the average.

4. The very young are more sensitive than adults. Seriously consider lead foil protection of gonads.

5. Cold, trauma and excitement increase sensitivity.

6. Dietary and vitamin deficiencies although not statistically significant seem to contribute to a poor prognosis.

7. Experimentally hypothermia and hypoxia during exposure reduce sensitivity

(Oxygen breathing over 20% in shelters would be contraindicated).

8. Cysteine, Glutathione (and other SH compounds) and Flavanones have been reported experimentally to reduce sensitivity to radiation.

9. Abdominal shielding reduces sensitivity by 50%.

After Exposure

Modification of the radiation effects can be obtained to a certain degree. Exercise is harmful and will increase the degree of radiation sickness. Experimentally ACTH and Vitamin K and analogues have been found to be harmful. Injurious effects have been modified experimentally by injection of bone marrow and spleen homogenates but these methods could not be used yet on a wide scale.

Therapy After Exposure

Treat the prostration resulting from vomiting and diarrhea by maintenance of the water, electrolyte and acid-base equilibrium.

Treat the infection associated with granulocytopenia and anemia by antibiotics, the hemorrhagic effects by platelet transfusion when practical. In group I patients the total dose will be in the region of 500-1000R, there will be 100% mortality and there is no purpose in heroic therapy.

Many persons will be in shelters without the advice or assistance of physicians. They should be made aware of the symptoms of granulocytopenia and should have a prescription of a wide spectrum antibiotic stored in the shelter. Injectable antibiotics are not practical and Panalba or Chloromycetin seem the most logical choices. The aplastic anemias reported with Chloromycetin are very rare and I feel have been given unwarranted publicity and in this circumstance where survival is important I feel it is a drug of choice and is advised as a calculated risk.

The anemia should not be treated by routine blood transfusions as blood itself is a

bone marrow depressant and unless the hemoglobin drops to levels of 5-6 G can probably be treated with oral iron; in these circumstances if the hemoglobin can be maintained at 9G for the first 4-6 weeks after assault until widespread medical facilities are available this should be adequate. Prophylactic iron is advisable and B₁₂ orally in large doses (100 mcgm daily) during the shelter period is advised, especially in those persons who will have to show themselves outside of the shelters, shortly after the initial fallout (i.e. 7-14 days).

All routine immunizations should be given.

Therapy of the hemorrhagic state appears to lie solely in the use of platelet transfusions where available. Rutin, Vitamin C and the Flavonones cannot be shown to be of benefit statistically but do seem to be of some benefit to many observers. Heparinemia cannot be blamed for the hemorrhagic manifestations which occur directly in relation to the decrease in the platelet count.

Radiotoxicity of ingested materials. While in the body these materials continue to give off radiation and in most cases once they are absorbed their elimination cannot be increased. In the ingested state even low energy Alpha and Beta particles can cause considerable damage. There is no practical method for measure of radioactive contamination of feces and urine. The main problem however is that of the "bone seeking" contaminant such as Strontium⁹⁰ which replaces calcium in bone. Strontium⁹⁰ is produced in large quantities by fusion bombs at the rate of 1G/KT and has a radioactive half life of 28 years, is readily absorbed and fixed in the skeleton. On the ground it is absorbed by plants in quantities inversely proportional to the amount of calcium in the soil. Uptake of Strontium⁹⁰ is mainly of concern in the late production of leukemia (some 10 years after absorption). The Marshallese Islanders who were accidentally exposed to large doses of fallout (100R) have been carefully studied along with the animals and plants similarly contaminated.

It was found that the proportion of radioactive substances ingested in proportion to the air dose of radiation was too small to have any significant effects. The effects seen in humans and animals was due to acute exposure and related only to those ingested elements which are highly soluble such as Strontium⁹⁰, Barium¹⁴⁰, I¹³¹ and the rare earths (this from studies of the Hiroshima survivors). Decay in surviving animals (those that live 4-6 weeks after the dropping of the bombs) was rapid and barely detectable six months after exposure and no signs of delayed radiation effects were seen at this time. In plants the main particles absorbed were Cesium¹³⁷ with small amounts of Ruthium¹⁰⁶ and Strontium⁹⁰.

Strontium⁹⁰ is the main problem as far as man is concerned and this is due to fixation in the skeleton of animals. Thus all animals surviving six weeks would be edible and safe from radiation effects if the meat alone is prepared and the skeleton discarded. In plants the radioactivity left in three months would be so little that all plants could be eaten with impunity. Thus it is only necessary to keep enough stored food in the shelters for three months after which any natural foods may be used.

Acute exposure to ingested foods can have the risk reduced by high calcium intake (such as milk) and precipitating agents such as the oxalates found in spinach and rhubarb. EDTA may be administered to chelate the absorbed radioactive elements but must be administered within the first few hours after exposure before the elements are fixed in the body tissues.

Zirconium citrate has been found experimentally to act as a colloidal ion exchange carrier which decomposed in the plasma to form a colloidal metal hydroxide which absorbs fission products and excretes them.

These agents are effective ONLY if given within the first few hours (4-8) after exposure and it suggested that EDTA and

Zirconium Citrate be administered together (The doses and modes of administration should soon be available). Once the radioactive substance is fixed in the tissues its excretion becomes steady and minimal.

Summary

An outline of factors protective and prophylactic against radioactive fallout are presented with all the information that a physician may be called upon to pass out to his patients and local civic organizations.

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M. J. ALLISON, Ph.D.

Cryptococcosis

Within the past year we have had six cases of meningitis with *Cryptococcus neoformans* isolated as the causative agent. Although one or two of these have been presented in several clinical conferences, we feel that a summation of information and some additional notes might be of interest to the clinical staff.

The organism first isolated in 1893 by Sanfelice from fruit juices was long considered a saprophyte since it was also grown from milk and other foods. It has been isolated also from soil and pigeon or human feces. The pathogenicity for laboratory animals of many of these strains including that of Sanfelice from fruit juice has been confirmed. Thus it may readily be seen that contact with this pathogen must be extremely common.

Once considered a rare disease, cryptococcosis has now become relatively common and is considered by some investigators to be on the increase. This is probably related to broad spectrum antibiotic therapy and long term steroid therapy. It has been calculated that 5,000 to 15,000 clinical or subclinical cases of pulmonary cryptococcosis exist every year in New York City alone.

Most investigators feel that the respiratory tract is the portal of entry and a history of a mild respiratory tract infection is common in patients with meningitis. The period between exposure to infection and the development of meningitis has been estimated as several weeks. Some investigators considered the isolation of this organism from the sputum as diagnostic for pulmonary disease but this is questionable since it can be transient flora from foodstuffs. Littman in his review calls attention to the fact that increased numbers of patients with cryptococcosis meningitis may be found among psychiatric

patients, especially those whose chief complaint is headache.

The differential diagnosis in cryptococcosis of the nervous system depends upon whether the cranial involvement is diffuse or localized. The diffuse type resembles tuberculous meningitis and the only distinguishing feature may be the isolation of the organism. Spinal fluid pressure is increased, the fluid may be clear, xanthochromic, or turbid, the cell count may vary from 3 to 1000 but generally is between 200 to 800. Spinal fluid globulin and albumin are usually increased and sugar normal or decreased. The colloidal gold curve is not diagnostic. The return of hydrostatic pressure and sugar to normal are considered useful parameters of clinical improvement. The differentiation from tuberculous meningitis aside from isolation of the organism may be based on the following (1) shorter and more acute clinical course of tuberculosis meningitis (2) greater frequency of tuberculous meningitis in younger age group (3) the presence of proven tuberculous foci in the lung and lymph nodes. The shorter duration and more benign course of lymphocytic choriomeningitis separates this from tuberculosis meningitis and neurosyphilis may be separated by the positive serology of the spinal fluid.

The localized type of cryptococcal granuloma in the brain or cord produces symptoms and signs suggestive of brain tumor, abscess, subdural hematoma or uncinate hernia. In these cases cultures may fail to reveal cryptococci unless repeated taps are done giving the laboratory large volumes of fluid to work with.

Cryptococcus neoformans is the only encapsulated yeast capable of invading the central nervous system. The demonstration of these yeast cells in the spinal fluid is therefore prima facie evidence of the presence of

cryptococcal meningitis. Since degenerating cells, oil and even air droplets may resemble the yeast we feel that budding forms must be found in the spinal fluid and cultures must be done. It is possible that saprophytic cryptococci also may have a capsule but they may be separated from the pathogenic *Cryptococcus neoformans* by failure of the former to grow at 37°C. Virulence tests in mice are generally only of academic interest for the average 73 days required to produce a lethal effect is too long to aid in the diagnosis.

Serologically no method has been devised that as yet has clinical applications for rapid diagnosis. Experimentally a "quellung" type of test may be used to separate the *Cryptococcus neoformans* into different groups as is done with pneumococci but this is not done in hospital laboratories.

Little is known of the allergic state in this disease. Positive skin tests have been elicited in patients by intradermal or subcutaneous extracts of boiled organisms, but pure polysaccharide preparations have all been negative.

While this disease usually has a fatal outcome in six months, cases do have remissions and have been known to drag on for years untreated. One of the problems involved in treatment with amphotericin B is the failure of the antibiotic to cross the blood/brain barrier in sufficient concentration. Levels of only 0.09 micrograms/ml. have been reported in spinal fluid following intravenous administration. Despite this low level many patients show a favorable response. If the spinal fluid still remains positive for organisms after prolonged intravenous therapy, intrathecal therapy has been used, but the margin between therapeutic and toxic dose is very narrow. It should also be borne in mind that amphotericin B possesses no antibacterial activity so that careful asepsis is necessary to avoid a complicating bacterial meningitis.

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Old-Style Air Purifiers May Be Harmful

Air purifying devices which emit ozone are no longer considered safe, according to Dr. Harry L. Huber, Chicago, an allergist and internist.

For many years it was thought that ozone was a safe and effective air-purifying gas, Dr. Huber wrote in the question and answer section of the July 27 *Journal of the American Medical Association*. However, he said: "Evidence has gradually accumulated to prove that ozone is a subtle gas which is very poisonous for experimental animals or human beings having continual exposure to

it, even if it is present in very low concentrations for a relatively short period."

The sources of natural and man-made ozone are numerous in the environment, and the gas cannot be completely avoided. The small amount that may be produced by an air purifying device may add enough to that already present to cause "discomfort and even harm."

Manufacturers of modern air purifying devices which produce ozone now incorporate techniques to control the emission of ozone.

Influenza 1962-63 Epidemic in Virginia

The first confirmed outbreak of influenza during the past influenza season began in Robeson County in Southern North Carolina during the early part of January, 1963. During the month of January the disease followed a northerly and southerly course along the Atlantic seaboard.

The week ending January 26, 1963, the epidemic was recognized in Virginia with the greatest concentration of cases appearing in the Richmond metropolitan area.

Physicians estimated the number of cases of influenza-like illnesses seen in their practice and reported to the State Health Department on a weekly basis. Physicians from eighty counties had reported cases of influenza-like illnesses by the week ending February 23. The disease was widespread throughout Virginia. Serologic confirmation of recent infection with Asian influenza virus was obtained on paired sera sent in from Alexandria, Augusta, Bedford, Carrsville, Charlottesville, Chesterfield, Fairfax, Floyd, Franklin, Frederick, Halifax, Hampton, Kecoughtan, Louisa, Newport News, Northampton, Richmond City, Rose Hill, South Boston, Smyth, Virginia Beach, Waynesboro, and Winchester. Attempts to isolate the virus were without success.

Weekly totals beginning with the week ending January 12 through the week ending March 23 were as follows: (1) 66; (2) 201; (3) 1,041; (4) 4,535; (5) 9,434; (6) 12,829; (7) 14,728; (8) 16,152; (9) 11,798; (10) 4,986; (11) 2,971. (See Chart 1.) It is noted that the weekly total for the week ending February 9 rose to 9,434 and the week ending March 2 was the peak week, totaling 14,728. During the first three months of 1963, Virginia had 395 deaths for which influenza was listed as a cause: a primary cause in 311 instances; a contributing cause in 84. (See Chart 2)

Of the 395 persons whose deaths were at-

tributed to influenza, 68.1 per cent were 65 years of age or older; and, furthermore, 17.7 per cents were at least 85, indicating that age was a primary factor in deaths from influenza. Influenza was listed as the primary cause of death for ten infants under the age of one year. (See Table 1) One hundred and

Chart 1

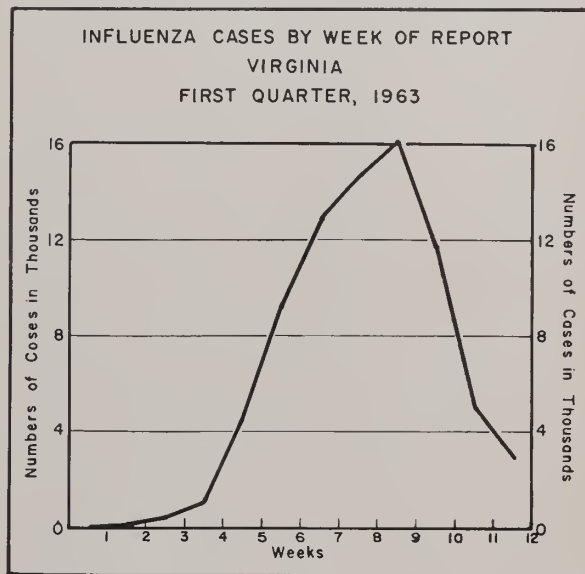
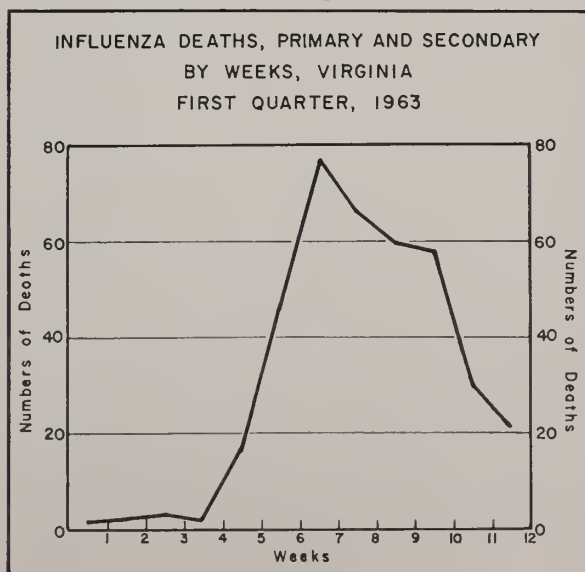


Chart 2



four persons, whose deaths were categorized as "Influenza, Primary", were less than 65 years of age. The 395 influenza deaths gave

the State a tri-monthly influenza death rate of 9.6 per 100,000 population. The per cent of influenza deaths by age groups are shown in Table 2.

TABLE 1
INFLUENZA DEATHS, PRIMARY AND SECONDARY,
By AGE GROUPS
Virginia, January-March, 1963

Age	Primary	Secondary	Total
Under 1 year	10		10
1-4	4		4
5-14	3		3
15-24	8		8
25-34	7		7
35-44	11	2	13
45-54	24	6	30
55-64	37	14	51
65-74	66	20	86
75-84	79	34	113
85-94	54	8	62
95+	8		8
TOTAL	311	84	395

TABLE 2
PER CENT DISTRIBUTION OF INFLUENZA, PRIMARY AND
SECONDARY, DEATHS BY AGE GROUPS
Virginia, January-March, 1963

Age Group	Per Cent
Under 1	2.5
1-44	8.9
45-64	20.5
65-84	50.4
85+	17.7

During the two-month period, January 26 through March 28, 1963, at least one person died each day from influenza with the exception of March 22. The daily maximum of sixteen deaths was recorded for February 16. Fourteen deaths occurred on February 7, 11, and 23. Seventy per cent of the deaths during the epidemic occurred from February 7 to March 7.

The seven-day moving average (the daily average calculated for successive groups of seven days) rose quickly in the first week of February reaching the peak on February 9. (See Chart 2) It maintained a high level

during the next week; then declined slightly and rose again. After March 3, this average declined steadily for the remainder of the month.

Of the 311 deaths attributed to influenza, primary, 116 were complicated by diseases not included in the 480-483 International Classification which covers: 480—Influenza with pneumonia; 481—Influenza with respiratory manifestations and influenza unqualified; 482—Influenza with digestive manifestations; 483—Influenza with nervous manifestations. Heart disease, contributory in 33 instances and arteriosclerosis, contributory in 19, were prominent in deaths of persons 65 years of age and older. Heart disease was the primary cause of death in 60 of the 84 deaths complicated by influenza. Influenza was not listed as the secondary cause of death for any persons under 35 years of age. In 195 instances influenza alone was mentioned as the cause of death. Deaths of 93 persons were due to influenza and heart disease, 19 to influenza and arteriosclerosis, and 18 to influenza and diabetes. Of the 25 deaths of persons under 25 years of age, 19 were due to influenza alone. Diabetes with two deaths, congenital malformations (2), diseases of early infancy (1), cerebral palsy (1), inborne defect of the muscle (1), combined with influenza in causing the deaths of the other six.

Influenza is a relatively mild respiratory disease for most people; however, this experience demonstrates groups of the population at greatest risk of death should they acquire the disease. Although the influenza vaccine does not protect as high a proportion of those vaccinated as do the vaccines for some other diseases, it is strongly urged for persons in the older age groups, particularly those over 65 and for those with chronic ailments.

WILLIAM M. LORDI, M.D.

Group Psychotherapy with Children A Five-Year Experience

The remarks included here are a preliminary clinical evaluation of a five-year experience with group psychotherapy. In order to make the comments in this paper understandable, it is felt useful to put them into context.

In the first place our clinic is an old, well-established clinic with some 38-year history in child guidance. It has had an opportunity, therefore, over the years to benefit from and to use extensively many of the ideas of diagnosis and treatment that have come into the field in the past 35 plus years. For the past five years the clinic has attempted to explore the dimensions of group psychotherapy. It has done this by using group psychotherapy and group psychotherapy principles in conducting intake, psychotherapy for children, adolescents, and adults.

Psychotherapy is conducted by psychiatrists, psychologists, and social workers. There has, of course, been individual psychotherapy going as far as indicated by the staff with selected patients, children, and their parents. All patients were selected only if parents or parent substitutes were willing to participate in therapy. All children had a battery of psychological tests, psychiatric interview, and family social case study.

Some of the simple premises that these tasks were approached with were as follows. In the first place all groups had co-equal psychotherapists so that each group of children, adolescents, and adults would have two psychotherapists of status relatively equal. These, of course, were supervised and were

also provided with consultation from the child psychiatrist in the clinic. The second premise is that all groups were open ended groups meaning that after they started they continued indefinitely. The composition of the group might change from time to time with group therapists using their judgment as to when the patient did terminate or the patient would spontaneously terminate, and when they would bring new members into the group. The entire composition of the group slowly changes over a period of time and even the group therapist may change. Group therapy as an effort continued, however. The continuity was maintained by the group. More often than not the continuity was also maintained by the co-therapists in the group. The third premise which seems to have been borne out by subsequent experiences is that the group provides an opportunity for psychotherapy for children as well as adolescents and adults, some of whom would not otherwise be reached in individual therapy. Group provides a greater number of opportunities for displacement, for transference, and for interaction with large numbers of people than are present in individual therapy. The fourth premise was one of exclusion. When it was felt that a child, an adolescent, or an adult had not yet sufficiently worked out their symbiotic relationship to the extent that this was the all consuming direction of the individual's efforts, they were felt not to be able to function adequately in group psychotherapy. This then excluded the autistic, symbiotic, and severely disturbed schizophrenic patient.

Children's groups were divided according to latency period group, pre-school, early adolescence and pubescence, and later adolescence. The children were divided along a single gender line. Our experiences with mixed groups did not seem to support chil-

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dren of both genders in the same group. With the adults our experience was to the contrary. Wherever possible both parents were simultaneously seen in the same group. While some authors find it profitable to divide the group efforts up into supportive, repressive, and analytic, it has been our premise and our experience that all of these elements go on with a simultaneity in our group therapy. The efforts of the group therapists are to attempt to help people arrive at an understanding of the historical origin of their conflicts and displacements and the defenses against these conflicts that are operative in the present. We also feel it is extremely useful to help the individual become aware of the way he used his conflicts out of the past, in the present, and for what purposes he uses them. To an extent, in spite of the efforts of the therapists the patients determine how useful these approaches will be. The patient's ability to accept and to come to terms with the confrontation color the approach used. Therefore, therapy goes on at several levels simultaneously. The group therapists provided for individual therapy hours as indicated for group patients.

The following remarks concern themselves primarily with work with children in our clinic. Several of the groups with children, mostly in the latency period, have been seen twice a week in group psychotherapy. Most of the children in adolescence have been seen once a week for an hour and a half session. The "latency" group children have been approached primarily in terms of providing in group therapy a semi-structured play therapy approach with the use of such props as wood-working shop, and the availability of games, and athletic equipment. The therapists in these groups usually concern themselves with the behavioral and verbal productions that happen in this context, the interaction between children and therapists, the child to another child, by the therapists and group members, and an attempt to help the child experience an environment that essentially can accept his

need for deviation, for reenacting old conflicts, for the feelings that he will inevitably experience. There is no restriction short of when the child is excessively destructive, excessively hurtful to other children or to the therapist. These are the only limits that have been set. This also pertains to the adolescent groups. The adolescent group demonstrates greater verbal facility. There is more ongoing and sustained discussion. We have perhaps paid less attention to the need for many props although the wood-working shop, basketball, baseball, and other athletic equipment and games are available. The latter are not as heavily capitalized upon by the adolescent groups, especially the older adolescent group, as they are in the latency age children. However, in all groups it is interesting to note that sometime during their hour they use equipment and props to express themselves, to act up, or to re-enact some of the drama of their personal lives. In no instance has there been any protracted group psychotherapy session which concerns itself with thought, introspection, examination of feeling to the exclusion of activities.

It is our impression that the latency child best handles his problems by coming to terms with their extension into the present and as it occurs during the group therapy hour. There is only a mild ability to sustain inspection of the historical roots of present problems and conflicts. Cookies and cokes are used as a final wind-down and discussion opportunity as the last 15-20 minutes of the session.

In our co-therapy combination for children we have made an effort to always have available in the couplet of co-equal therapists a male and a female. In most groups this has been possible most of the time. We, therefore, see in the group therapy with latency boys and girls, a re-enactment in the group with the peers, as well as the therapists and materials, many of the family problems and much of the family drama. A great deal of the projection and displacing onto the therapist and to other children of the attitudes and the conflicts that were en-

gendered in his life is done without making a one-to-one connection between similarity of the present situation the latency child is reliving. He resists establishing a relationship between past and present. In contradistinction the adolescent more often than not is able to be more introspective and settles more often for associating what is going on in the present and what he inadvertently re-enacts from the past. This is by no means the clear-cut phenomenon. While there are many adolescents who seem to be able successfully to resist applying what has won in his present group therapy experience, in his own home, there, too, are many latency children who are able to conscientiously and verbally make the association between their present and past experience.

The latency child appears to more compellingly recreate the family unit and to assign less imaginatively the role to the male and female therapists that their parents enjoy toward them. The adolescent on the other hand, though he can more tellingly recognize the relatedness of present behavior to past, seems to have a need to be more openingly independent from the group therapist, though there are moments of tenderness and closeness, anger, and appeals for support. The need to be recognized as an individual and a group member seems to come through more for him. The adolescent assigns the role of parent to the therapist however. It is often not as clear cut as with the latency child in our experience. There are, of course, approximations of large numbers of group experiences in a large number of groups and they by no means predict the individual behavior of the individual child.

An important turning point in therapy for the child seems to be arrived at relatively often simultaneously as the parents appear

to be arriving at a more independent position less needing the support that is gained in group therapy. When the child is more comfortable in directly communicating feelings to the parent, then the child seems to be able to separate himself from group therapy. Our experience has been that the adolescent, even in the face of less progress on the part of his parents, handles termination of therapy better than the latency child. The latency child appears to be more vulnerable to recidivism if the parents have not been able to work through either their pathological attitudes toward the child or resolve their own emotional overloading.

The preliminary conclusions that we are drawing at the present time are as follows:

(1) group psychotherapy with children makes therapy possible for greater numbers of children because of greater opportunities for displacement, transference, alliances and interaction present in the group,

(2) that co-equal therapists seem to furnish the more ideal therapy situation in groups with children as well as adults,

(3) the children and adults to be excluded from group therapy seem primarily related to the degree of personality fixation at a symbiotic level and all others regardless of symptomatology are capable of benefiting from group therapy experience.

(4) The latency child seems to be able to work through his problems in living in spite of his modest capacity for introspection.

(5) The adolescent child is capable of considerable introspection and association of past events and feelings with the present re-enactment through his symptoms.

(6) The latency child tolerates more poorly the lack of growth on the part of his parents in group therapy.

The Medical Society of Virginia . . .

AMA Institute

The Medical Society of Virginia had one of the largest representations of any State in the Union at this meeting of the AMA Institute, held in Chicago, August 22-23. Heading the list of our representatives was President-Elect, Dick Palmer of Alexandria. Others present were Dr. Robert Neu of Arlington, Dr. Baxter H. Byerly of Danville, Mr. Robert Versprille, Executive Secretary of the Norfolk Medical Society, Mr. Robert I. Howard and Yours Truly.

Mr. Leo Brown, Assistant to F. J. L. Blasingame, Executive Vice President of the AMA, conducted the meeting and, as usual, did a wonderful job.

Each year we look forward to opening remarks by Dr. Blasingame, and this year was no exception. He opened his remarks by quoting Socrates in this respect, "The Unexamined Life is Not Worth Living", and he elaborated on this aspect of the medical profession in which he justified the criticisms and questioning of the medical profession and how we are conducting our business, especially in regard to the care of the Senior Citizens, primarily those who are unable to meet their medical bills. At the present time, the AMA has approximately 200,000 members or in excess of that. Dr. Blasingame always has many pearls of wisdom to extend to those in attendance and one of his most important remarks was, "Kites only fly against the wind" and under this, that the greater the opposition to a kite, that is the stronger the force of the wind of opposition, the higher the height of attainment of the kite, and this he compared to the medical profession stressing the point that the more opposition we have from outside interests or outside organizations criticizing our activities and what we do, we can by concerted efforts obtain greater heights of achievements in providing medical care both for the indigent, the senior

citizen, and all citizens of our country. He commented on the film, "The One Who Heals", and said that already 4,000 had attended showings of this film. At the present time, there are 37 states which have the Kerr-Mills form of care for their senior citizens but he stressed the point that there are irregularities in care for the medically indigent but this varies from person to person and in localities and the point to remember is to analyze the care needed in our local communities and provide whatever care is necessary. Another point he stressed was how Administrative medicine reacts to the Press when we are in trouble.

Following Dr. Blasingame's remarks, Mr. Clark R. Mollenhoff, Washington Correspondent of the Des Moines Register and Tribune, talked on the "Critique of Modern Day Coverage of Washington News". Among the many subjects that he discussed the one of most interest was the TFX Contract. In this remark, I am unable to mention the many things that he discussed but would suggest that every doctor obtain a copy of the book, *Washington Cover-Up*, read it first yourself and then place it in your waiting room for the patients to read because it is a glaring example of what is going on in Washington, both constructive and destructive. His final instructions were for all of us to be informed critics.

Mr. Hugh W. Brennehan, Public Relations Counsel of Michigan State Medical Society, was moderator in the next program and anyone who knows him knows that he does an exceptional job of anything to which he is assigned and his assignment as moderator for the program of "Accentuating the Positive-Reacting to the Negative" was characteristic of Hugh's outstanding abilities. Hugh and his panelists gave us a great deal of very valuable information but the one point that I wish to pass on to you was his definition of the Demigod: "I found them poor and I leave them poorer." Of

course, in this paper, I would not dare mention who he referred to as a Demigod but you can draw your own conclusions.

Following the morning session, we had a delightful luncheon at which Ward B. Stevenson, President of Public Relations Society of America, made a most enlightening talk. Mr. Stevenson said that on one occasion when he was presented at a meeting some one asked him if he was an Argyle Robertson pupil. Of course we thought that this was a student of some intellectual school but he informed us that a Argyle Robertson pupil was a small irregular body that reacted slowly. However, I assure you, all who heard Mr. Stevenson disagree with this description of him as his remarks were most enlightening. He urged all physicians to assume an imaginative role in leadership in our community.

The afternoon session was devoted to a Preview Report from the Commission on the Cost of Medical Care and Making Health Insurance Work. This was a very dry and apparently uninteresting subject to those in attendance but was presented in an affable manner. Attendance compared to the morning session was very small indicating that those in attendance were more concerned with Public Relations than Medical Care. However, there was one factor which may have contributed to the small attendance and that was a professional ball game played that afternoon in Chicago. Anyhow, the medical profession is supposed to participate in community projects and that baseball game that afternoon was certainly a community project of worldwide interest.

However, I must compliment the Virginia representatives as every one of them stayed through the afternoon session even though it was not of particular interest to us from Virginia since our able physician, Dr. Bill Johnson, who heads the Medical Service Committee of The Medical Society of Virginia, is doing an excellent job for all of us in this field.

One of the comical or interesting remarks made during the Panel on Medical Health

Insurance Phase was "Why Does a Baby Cry When It's Born"? He cries because he has nothing to eat, nothing to wear, and is born saddled with a \$2,000 debt.

Friday morning's session was most interesting to us since it dealt with the Town and Gown Syndrome which relates to the problems of the medical schools and the relationship of the teaching members of the medical schools and the physicians in the surrounding communities. We, in Virginia, are fortunate in having two high grade medical schools and there is a problem regarding the inter-relationship between the teaching staff in the hospitals and the physicians in the surrounding communities. Dr. W. Clark Wescoe, Chancellor of the University of Kansas and one of the panelists in this discussion, emphasized the fact that the primary purpose of a medical school is to produce doctors to treat, not teach and research. He emphasized the fact that in medical schools too often they have staff members who teach but do not practice medicine and the deans of the medical schools do not utilize all doctors who practice in the community and could do an excellent job teaching the medical students the art of medicine rather than the scientific aspects of medicine. He emphasized the fact that if we could do away with the conflict between the medical schools and the doctors in the surrounding communities, it would be an extreme medical triumph with benefits for all concerned.

I believe that Dr. Hussey occupied the star position on this discussion and he remarked on the "Principles of Therapy". Dr. Hussey has a vast field of experience and is a professor par excellence at handling the English language. His opinion was that the lack of communication and understanding between the teaching staff and the doctors in the community affects the acceptance between the Town and Gown Syndrome. He concluded his remarks that the answer to this problem is good communications with a liaison effective in settling differences between the teaching staff of the medical

schools and the doctors in the surrounding communities.

Following the Town and Gown discussion, there was an informative panel regarding Professional Relations with Voluntary Health Agencies. This was moderated by Dr. Sidney J. Shipman, Chairman of the AMA Committee on Voluntary Health Agencies, and, incidentally, he is Chairman of the Shipman Committee. Dr. Shipman remarked concerning the National Foundation of Polio and the National TB Foundation with over 6,000 doctor members. He discussed the fact that the National TB Foundation had gone into other fields of chest conditions. He urged every physician to participate in the activities of these voluntary health agencies as, in his opinion, physician participation brightens the image of the physician in the eye of the public. He urged doctors to work with voluntary health agencies in all fields and to provide needed medical guidance and stressed the point that the role of the community or county medical society was paramount in these activities, stressing mutual cooperation and respect for all concerned. He urged every county medical society to appoint a committee to deal with, counsel, and give guidance, to voluntary agencies in their communities and, at the same time, maintain a liaison cooperative program for planning this mutual exchange of information regarding their activities or future programs and continuing a review of the agencies stressing also the importance of reviewing the agencies and giving liaison between the medical societies and local voluntary health agencies. There is, at the present time, an adequate staff at AMA Headquarters to assist local and state medical societies in an advisory capacity to determine the degree and type of participation of the local societies with voluntary health agencies.

In my opinion, and in the opinion of everyone who has heard the luncheon speaker on Friday, there could be no greater climax to any medical meeting than a talk by our eminent president of the AMA, Dr.

Edward R. Annis, and he really poured on the "works" at the luncheon meeting on Friday. He commented on several films that are being made available to the state and local medical societies for a showing in their communities. One of those is "The One Who Heals" and the other is "Pitfalls". He also stressed the project of the AMA, "Operation Home Town". He emphasized the fact that at the present time the AMA has a membership of 200,000 with 80,000 membership in the Auxiliary. He made a comical remark in that he did not feel that there were, at the present time, 120,000 bachelors in the medical profession and members of the AMA to bring out the point that there were many doctor's wives who were not members of their local auxiliaries and stressed the importance and the wonderful work that these great ladies could do if they got together and worked with the medical profession in their local communities. He stated that at the present time the HEW had in its financial reserve 60 million dollars which is three times the Social Security reserve. Unions, at the present time, have dues aggregating \$80,000,000 per month whereas the dues of the members of the AMA total only \$20,000,000 a year. He stressed the point that dollars can really work and urged that we have a greater participation by the members of the AMA, their wives, and increase in the donations to the AMA so they can better carry on the enormous job with which they are faced.

In closing, I wish to thank the members of The Medical Society of Virginia and their executive secretaries who attended this meeting and hope that in 1964 our attendance will be much more as I feel that by attendance at these AMA Institutes the members of the medical societies can really learn what is going on and be better informed as how to combat the problems facing both the physicians of our State as well as the Nation.

JOHN WYATT DAVIS, JR., M.D.
Chairman, Public Relations Committee

Medical Aspects of Driver Limitation

The American Medical Association believes that physicians must assume leadership in the development of sound medical criteria for driver licensing. It is obvious that a person must possess certain minimum physical and mental abilities to operate a motor vehicle safely. Although it is not possible with currently available information to determine the percentage of automobile accidents related to physical or mental disabilities, it is believed that such disabilities are significant factors in the causation of accidents.

The granting, restricting, or withdrawing of the motor vehicle operator's license is the function of the driver licensing agency in each state. It should be the purpose of each motor vehicle administration to license all applicants who can operate a motor vehicle with safety to themselves and others and to restrict, withdraw, or deny the license to those who present an unwarranted risk to the public. The physician has an important role in identifying those persons who should not be licensed. The diagnosis of medical conditions affecting the ability of an individual to operate a motor vehicle is the responsibility solely of the physician. The physician is expected to exercise sound judgment based on individual evaluation of the applicant. Adequate legislation for the protection of the physician in carrying out his responsibilities should be enacted in each state.

The license to operate a motor vehicle is a very important factor in present day society. The license should not be restricted, withdrawn, or denied on capricious or arbitrary grounds. Mechanisms for review and appeal must be provided to protect the rights of the individual.

The improvement of the automobile accident record in the United States is a matter

of urgent concern to which all physicians should devote their skills and energies.

The American Medical Association believes that the recognition and appropriate handling of "driver limitation" will contribute markedly to automobile accident prevention programs. "Driver limitation" as used in this statement is defined as a condition or state due to physical and/or mental factors which results in impairment of the ability to operate a motor vehicle safely. The following are basic principles which should apply to any program of "driver limitation" based on medical factors:

1. Age per se should not be a limitation once the individual reaches licensing age; rather, the functional capacity and ability of each individual should be the determining factor.

2. Psychiatric disturbances are recognized as potential factors in accidents. The attending physician should be responsible for advising motor vehicle administrators whether or not "driver limitation" exists in individuals discharged from mental institutions.

3. Acute and short-term disabilities should be recognized in relation to "driver limitation". In chronic illnesses, only uncompensated or intractable medical limitations are of concern to vehicle operation.

4. "Driver limitation" may be created by either a single major impairment or multiple minor impairments which collectively render the individual incapable of operating a motor vehicle safely.

5. Recipients of aid under various programs for the blind and individuals receiving Internal Revenue Service exemptions for visual loss should be considered automatically to be in the "driver limitation" group.

6. The use of drugs and medications affecting the ability to drive result in "driver limitation" in some individuals. It is the physician's responsibility to caution his patients of driving age concerning the rela-

tionship of drugs and motor vehicle operation.

The following nine general areas are the most significant of the medical problems which must be evaluated to determine if "driver limitation" exists:

- 1. Mental retardation below the ability to read.
- 2. Uncompensated arthritic, skeletal, and amputation deformities likely to interfere with safe driving.
- Neurological defects, e.g., spastic defects; ataxia; paralysis agitans; intractable seizure states or blackouts; intractable narcolepsy.
- 4. Cardiovascular defects, e.g., intractable Stokes-Adams syndrome; intractable angina pectoris; uncontrollable malignant hypertension; severe or intractable cardiac decompensation with dyspnea at rest; generalized and severe arteriosclerotic disease of incapacitating degree.
- 5. Psychiatric problems, e.g., intractable psychoneurotic disorders, especially sustained hostile, aggressive, and paranoid states; agitated depression.

- 6. Obesity (gross and severe).
- 7. Gross sensory deficits, e.g., severe impairments of corrected central visual acuity; severe reductions in visual fields; severe impairment of hearing.
- 8. Chronic alcoholism and drug addiction.
- 9. Other medical conditions demanding individual analysis.

It is recommended that a medical examination for "driver limitation" be conducted at least under the following conditions:

- 1. When a license applicant displays an obviously impaired physical function.
- 2. When a driver has been involved in multiple accidents within a short calendar period.
- 3. When a driver must be placed in the "assigned risk" pool for insurance underwriting because of refusal by various commercial insurance carriers to assume the risk.
- 4. When a driver voluntarily suggests that he "blacked out" or that medical problems contributed to an accident.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE
DISEASE CONTROL

	Sept. 1963	Sept. 1962	Jan.- Sept. 1963	Jan.- Sept. 1962
Brucellosis	2	2	7	10
Diphtheria	0	3	0	11
Hepatitis	53	72	677	983
Measles	50	52	8046	9259
Meningococcal Infections ..	2	2	71	53
Aseptic Meningitis	4	10	25	39
Poliomyelitis	5	1	7	7
Rabies (In Animals)	15	12	151	117
Rocky Mt. Spotted Fever ..	1	11	34	44
Streptococcal Infections ...	421	325	7157	5678
Tularemia	1	1	7	13
Typhoid Fever	1	0	8	14

Letters to the Editor . . .

Editor's Note: Dr. Koontz states that he has received many letters concerning the communication referred to above, entitled "Uhuru." With one exception, a letter from a non-member of The Medical Society of Virginia who lives in New York City, they were all favorable. Thus far he has received requests for over five hundred reprints.

UHURU.

Sir:

I have read the article UHURU! by Amos R. Koontz, M.D. in the Virginia Medical Monthly (see Letter to Editor, August, 1963, page 387) and wish to state that in my opinion this is certainly not material for a medical journal.

Furthermore, the comparison of the Kenya situation with the Negro problem in the USA by Dr. Koontz reeks of his prejudice besides showing a lack of judgment of history.

My most serious complaint, however, rises from his most apparent lack of insight into humanity. As a physician, he should not be so bereft of simple kindness and understanding of people as individuals.

WERNER KREBSER, M.D.

Old Dominion Medical Center
McLean, Virginia

Sir:

It is regrettable that the Virginia Medical Monthly should become a forum for the discussion of the race question. Since its pages were opened to Amos Koontz (August, 1963, page 387), I feel that there should be some expression of more moderate views.

In opposing the views of Dr. Koontz,

however, let us have compassion for him, personally, since his views lead him to serious errors of logic and of fact. He tries to apply the conditions in Kenya to those in the United States, a manifest absurdity. He is willing to generalize about black people and white people, using "they" for black and "we" for white, stating that if "they acted like (*sic*) people, they would be treated like (*sic*) white people". Which white people? Profumo? Elizabeth Taylor? Hitler? White people who bomb churches? Let us hope that all Negroes will not act as some white people.

Is Dr. Koontz fair in labelling those with whom he may disagree "bleeding hearts", "political opportunists", and "theoretical idealists"? Using Dr. Koontz's twisted logic, one would wonder if he, himself, should be relegated to the position of the average Negro, or even the average Negro physician, because he had not personally wrested an empire from the wilderness.

I am sure that there are a large number of physicians who, recognizing human weakness and the complexity of the race problem, wish for the Negro all the privilege and prosperity his *individual* sense of responsibility will allow.

Charity suffereth long and is kind, . . .
Charity vaunteth not itself, is not puffed up, . . .

And now abideth faith, hope, charity, these three; but the greatest of these is charity.

WILLIAM D. POE, M.D.

Roanoke Valley Medical Clinic
Roanoke, Virginia

Editorial



New President

RICHARD EMERY PALMER, 109th President of The Medical Society of Virginia, youngest of the five children of Maurice Emery Palmer and Mattie May Mankin of Pleasant Valley, Virginia, was born in Washington, D. C., on March 24, 1919.

Educated in public schools of Washington, D. C., graduated from George Washington University and its medical school in 1944. Following internship and residency at George Washington Hospital, he entered the U. S. Army in World War II, serving among other posts as Director of Laboratories, U. S. Military Academy, West Point, New York. Upon discharge, he returned to George Washington as Fellow in Pathology, where he now serves as Assistant Clinical Professor of Pathology.

Since 1949, Dr. Palmer has been Pathologist and Director of Laboratories at the Alexandria Hospital and Circle Terrace Hospital.

He has served as Chief of Staff at Alexandria and Circle Terrace Hospitals and as President of the Alexandria Medical Society. In 1962, he was elected national President of the American Society of Clinical Pathologists. Certified by the American Board of Pathology, he is a Fellow of the College of American Pathologists, the International Academy of Pathologists, the Society for Nuclear Medicine, and the American Association of Blood Banks.

Active in local affairs, he has served on the Board of Directors of the American Cancer Society, the American Red Cross, the Chamber of Commerce, and the Security Savings and Loan Association. Politically he is a "Virginia conservative."

Married to Mary Lou Nash of North Carolina in 1943, the Palmers have four children, Richard, Deborah, Maury, and Mary. They are members of the Methodist Church.

It has been said that if you wish to have a job well done, give it to a busy man. The Society can look forward to a successful year under Dick's leadership.

W.D.D.

New Members.

During the month of September, the following new members were received into The Medical Society of Virginia:

Edward Daniel Carey, M.D., Falls Church
Albert Charles Casabona, M.D., Fairfax
Virginia A. Duggins, M.D., Arlington
William M. Eagles, M.D., Richmond
Blake Fawcett, M.D., Radford
Wilfred F. Gallinek, M.D., Arlington
David Bennett Hill, M.D., Lynchburg
David Phlegar Olinger, M.D., Richlands
Robert Walter Olwine, M.D., Grundy
David Pope, M.D., Arlington
Douglas Fuller Powers, M.D., Richmond
Marion Dickenson Richmond, M.D.,
Martinsville
Gerald William Roller, M.D., Roanoke
Anatol Ryplansky, M.D., Radford
Uthman A. Shibaro, M.D., Vienna
Bernard F. Smith, M.D., Arlington
Walter Joseph Walker, M.D., Radford
Frederic B. Westervelt, Jr., M.D.,
Charlottesville

The Annual Meeting

Of The Medical Society of Virginia, held in Roanoke, October 6-9, will go down in history as one of the best! There was good attendance at all sessions, in the exhibit halls, and the banquet was a sell-out—due we believe, at least partly, to the fact that the speaker was none other than Dr. Edward R. Annis, President of the American Medical Association. There was a registered attendance of nine hundred and thirty-six, which includes one hundred and twenty-six Aux-

iliary members, and one hundred and thirty-five exhibitors.

Dr. Richard E. Palmer, Alexandria, was installed as president, succeeding Dr. Fletcher J. Wright, Jr., Petersburg. Dr. McLemore Birdsong, Charlottesville, was named president-elect; Drs. John A. Martin, Roanoke, J. A. White, Virginia Beach, and Thomas S. Edwards, Charlottesville, vice-presidents; and Robert I. Howard, was re-elected executive secretary-treasurer. Dr. Kinloch Nelson, Richmond, continues as speaker of the House, with Dr. W. Callier Salley, Norfolk, as vice-speaker. New councilors are Dr. F. Ashton Carmines, Newport News, and Dr. W. W. Walton, Pulaski. Drs. Thomas W. Murrell, Jr., Richmond; Nash Thompson, Stuart, and Dennis P. McCarty, Front Royal, were re-elected to the Council; and Drs. K. K. Wallace, Norfolk; A. Tyree Finch, Farmville; Alexander McCausland, Roanoke; James G. Willis, Fredericksburg, and Michael A. Puzak, Arlington, hold over for another year. Drs. W. Linwood Ball, Richmond, and Allen Barker, Roanoke, were re-elected as delegates to the American Medical Association, with Drs. W. Callier Salley, Norfolk, and Russell Buxton, Newport News, as alternates. Drs. Vincent W. Archer, Charlottesville, and John T. T. Hundley, Lynchburg, hold over as delegate and alternate, respectively, for another year.

The local committee of arrangements, headed by Dr. John A. Martin, is to be congratulated on the excellent work they did in connection with this meeting. The Hotel Roanoke also seemed to anticipate the needs of the doctors, committees, luncheons, and other meetings. All in all, it was an excellent meeting.

The 1964 annual meeting will be held at The Golden Triangle, Norfolk, October 11-14. It isn't too soon to be making your plans to attend!

Dr. William S. Jordan, Jr.,

Professor of preventive medicine and chairman of the department and professor of internal medicine at the University of Virginia, has been named vice chairman of the committee on Research, Medical Care, of the National Foundation.

Dr. John J. Kelly, III,

Has been named chief of medical service at McGuire Veterans Administration Hospital, Richmond. He succeeds Dr. Albert J. Wasserman who resigned to enter private practice. Dr. Kelly is a graduate of the Medical College of Virginia and is a member of the faculty and assistant professor of medicine. Since 1954, he has been chief of the second general medical section at McGuire.

Donation Day for Sheltering Arms.

November 14th is Donation Day at Sheltering Arms Hospital in Richmond. In order to meet the operating budget of \$401,000 for the coming year, \$160,000 will have to be raised from the hospital's many friends. Sheltering Arms' purpose remains the same as always—To provide hospital care for those unable to pay for it, and to make its patients feel they are welcome guests.

Last year the average cost per day per patient was \$25.05. This amounts to well over \$1,000 a day to run the hospital. Part of this expense comes from the Endowment Fund. The rest must come from contributions and special gifts. Sheltering Arms serves patients from all over Virginia, not just from Richmond, and is the State's only free general hospital.

Send your donation to the Hospital at 1008 East Clay Street, Richmond.

Dr. William W. Whitehurst

Has assumed his duties as the first chief of the Richmond Health Department's new

Bureau of Disease. He is a native of Lexington and a graduate of the Medical College of Virginia. Dr. Whitehurst recently returned from Germany where he served as chief of the outpatient clinic for the army's 14th Field Hospital.

Dr. Randolph H. Hoge,

Richmond, has been elected president of the Society of Pelvic Surgeons. He is professor of gynecology and obstetrics and chairman of the gynecology division of the Medical College of Virginia.

Hodgkin's Disease.

The cooperation of physicians is requested in a study of Hodgkin's disease being conducted by the National Cancer Institute's Medicine Branch at the Clinical Center, National Institutes of Health, Bethesda, Maryland. Particularly desired are patients who have had no previous treatment, or minimal prior treatment. All clinical stages of biopsy-proven disease are acceptable. The major purpose of the study is to determine the therapeutic effect of combination chemotherapy and x-irradiation.

Physicians who wish to have their patients considered for the study should phone or write Vincent DeVita, M.D., or Emil Frei, III, M.D., Medicine Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland 20014. Telephone 49-64251 (Area Code 301).

Dr. Maynard P. Smith,

Richmond, was one of the participants in a symposium on Postgraduate Teaching in Rhinology presented at the annual meeting of the American Rhinologic Society in New York, October 20th.

Fitness to Drive a Motor Vehicle.

Single copies of the Medical Guide for Physicians in Determining Fitness to Drive

a Motor Vehicle may be obtained by individual physicians without cost by writing to the American Medical Association at 535 N. Dearborn Street, Chicago, Ill. 60610.

Radiologist,

Board Certified, with several years experience in diagnostic work, desires affiliation with two or three 50-100 bed hospitals. Write Radiologist, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia. (*Adv.*)

Equipment and Books for Sale.

McKesson BMR Machine, \$50.00; Aloe Cold Quartz Ultra Violet Lamp, \$25.00; Berens Tolman Tonometer, \$5.00; 2 Stethoscopes, \$4.50 each; Female Cystoscope, \$20.00; 1 lot of laboratory equipment (glassware, etc.), \$25.00; 1 lot of Steri-Tubes, 2 cc. with syringes, 50¢ each; 1 lot of single hypodermic needles (new), 10¢ each; 1 lot of single syringes (new), 5 cc. and above, \$1.00 each, and smaller size, 50¢ each; 1 lot of surgical blades, 50¢ each. Books—Human Anatomy—Piersol, \$5.00; Human Anatomy—Morris, \$4.00; Handbook of Differential Diagnosis—Hyman, \$3.00; Correlative Neuroanatomy and Functional Neurology—Chusid and McDonald, \$3.00; Electrocardi-

ography—Wolff, \$2.00; Water Electrolyte & Acid-Base Syndromes—Goldberger, \$2.

Contact H. Linwood Ford, 5001 West Broad Street, P. O. Box 8207, Richmond, Virginia 23226. (*Adv.*)

The Virginia State Department of Health

Invites applications from physicians interested in public health as a career. Appointments available as directors of local health departments with inservice training and state-financed post-graduate study leading to Master of Public Health Degree. Salary range \$12,000 to \$15,675; entrance salary dependent upon qualifications. Applicants must be American citizens, under 48, and eligible for Virginia licensure; liberal sick leave, vacation, group life insurance, malpractice insurance and retirement benefits. Write Director, Local Health Services, Virginia State Department of Health, Richmond, Virginia 23219. (*Adv.*)

Medical Illustration Service.

We will prepare art-work, charts, graphs and diagrammatic material to your written specifications for papers, lectures or other needs. Rapid, neat service. Reasonable rates. Write N. Apgar, 2207 Buford Road, Richmond, Virginia 23235. (*Adv.*)

Obituaries

Dr. Cary Elphus Via,

Norfolk, died September 29th, at the age of eighty. He was a native of Scottsville and graduated from the former University College of Medicine in 1903. Dr. Via practiced for three years in Gloucester before locating in Norfolk where he limited his specialty to diseases of the eye, ear, nose and throat. He was a 50-year member of the Masons, a member of Scottish Rites, Knights Templar and a Shriner. Dr. Via had been a member of The Medical Society of Virginia for fifty-nine years.

His wife and a daughter survive him.

Dr. Miller.

In the death of Dr. Harold Wilbur Miller, the State Board of Health lost a respected and faithful colleague. Dr. Miller, a native of Woodstock, was first appointed to the State Board of Health in July, 1961, to fill the unexpired term of Mrs. Franklin H. Kenworthy, who resigned because of ill health. In 1962 he was reappointed to a full seven-year term.

Although Dr. Miller served but a short time as a member of the Board, he attended the meetings regularly and displayed keen interest and sound judgment during its deliberations. His chief concern was always the improvement of the health of the citizens of the Commonwealth.

We feel a deep sense of loss in his passing and desire to extend to his family and to his many friends our sincerest sympathy.

NOW, THEREFORE, BE IT RESOLVED, that this expression of our feelings be read into the minutes of the State Board of Health and that a copy be transmitted to Mrs. Miller.

JAMES L. HAMNER, M.D., *President*
MACK I. SHANHOLTZ, M.D., *Secretary*

Dr. Bell.

WHEREAS God in His infinite wisdom has removed Baxter Israel Bell, Sr., from our midst September 9, 1963, in his seventy-fourth year, we, the members of the Williamsburg-James City County Medical Society wish to pay tribute to his memory in recognition of our great loss and of the great loss to this community in the passing of our senior physician.

Dr. Bell, who was born near Swan Quarter, North Carolina, had his pre-medical education at the Uni-

versity of North Carolina, and was graduated a Doctor of Medicine from the Medical College of Virginia in 1915. Following internship at the Abingdon (Virginia) Hospital and practice with a mining company, he came to Williamsburg in 1917 as assistant physician at the Eastern State Hospital where he remained until 1925. That year he began practice in Williamsburg and continued active until several months prior to his death. He and his associate, Dr. Edwin Alderman, founded in 1926 a private hospital in the former Williamsburg Hotel at the corner of Duke of Gloucester and South England Streets. In 1930 he opened the newly constructed Bell Hospital, the first general hospital in Williamsburg, and added to the structure on two occasions. This hospital has been in continuous operation since 1930 except for a short period following World War II when a minimum number of nurses could not be obtained. He made the facilities of this hospital available to practicing physicians in Williamsburg and neighboring areas for hospitalization of patients in their care. He was an active member of the medical staff of the Williamsburg Community Hospital, Incorporated.

He served as president of this society on several occasions. On October 30, 1957, he was chosen Virginia General Practitioner of the Year by The Medical Society of Virginia during its 110th annual meeting upon nomination of this society. The Associated Press release published October 31, 1957 in the RICHMOND TIMES-DISPATCH stated "Dr. Bell was too busy doctoring patients, however, to attend the meeting". He was appointed physician to the College of William and Mary in 1935, and served for 12 years. The College conferred upon him the Algernon Sydney Sullivan award of the New York Southern Society in 1955 in fulfillment of the society's requirements "in possession of such characteristics of heart, mind and conduct as evidence a spirit of love for and helpfulness to others". The esteem and tribute of this community was expressed to him in May, 1957 in the community night program "in appreciation of his endless, unselfish, untiring devotion to the people of this area". Our society honored him at its December 1957 meeting.

THEREFORE, BE IT RESOLVED on October 9, 1963, that we convey to his bereaved family our regard of him and our sympathy in their sorrow, and

BE IT RESOLVED that we pay tribute to this memory by placing the 11th edition of Cecil-Loeb's MEDICINE as a memorial in the medical library of the Williamsburg Community Hospital, Incorporated, and

BE IT RESOLVED further that the society record in its minutes our sorrow upon his death, and that this

memoriam be sent to Mrs. Bell and also to The Virginia Medical Monthly.

U. G. BRADENHAM, D.D.S.

CARLTON J. CASEY, M.D.

HUGH G. STOKES, JR., M.D.

Dr. Hooker.

George Wesley Hooker, M.D., was born in Patrick County, on May 30, 1879, the son of John Hooker and Margaret Akers Hooker. He was one of a large family, there being eight brothers and four sisters. Dr. Hooker's family possessed an unusual energy and intelligence. Under the able guidance of their ambitious and honorable parents a most unusual record was made by this large family. The poor farmland along Buffalo Creek in Patrick County produced an abundant crop of sturdy, intelligent, thrifty and energetic children. From these humble beginnings one brother, Murray Hooker was a member of Congress for many years. Another brother, Lester Hooker is now on the State Corporation Commission. Another brother, Sam Hooker became a very successful furniture manufacturer in Martinsville, Virginia. The other brothers were also successful in mining, farming, lumbering and business. His early environment of hard work well prepared Dr. Hooker for his strenuous career in medicine. He attended Danville Military Academy and graduated from the Sewanee Medical School in 1904. He first practiced in the coal fields of West Virginia. As Dr. Hooker expressed it, he soon became quite proficient and was able to deliver babies without soiling the long underwear of the mothers. He then embarked on general practice in Rocky Mount in 1907. My introduction to Dr. Hooker occurred quite early in my life. Actually, my first conscious memory and rude introduction to life occurred when my mother held me across her knee and Dr. Hooker gave me a shot of diphtheria antitoxin. His tireless energy enabled him to have a most extensive country practice in Franklin County. He employed buggies and then in wet weather he went about his practice on horseback. Automobiles came into use around World War I. During the winter months horses were necessary because of the poor road. The influenza epidemic of the winter of 1917-18 and subsequent years of hard work finally convinced Dr. Hooker that he either move to Roanoke or else to his grave.

Dr. Hooker embarked upon general practice in Roanoke in 1921. Again, his remarkable energy and personality insured a very comfortable practice. He began to curtail his work in 1950 and thereafter maintained a very busy office practice. He might not have employed the most technical diagnostic methods. He did have however dispense the largest measure of comfort to his patients of any doctor in Roanoke.

It is indeed true that we have recently witnessed the passing of probably the most unusual personality in medicine in Roanoke. He possessed the insight of a genius into human nature and was able by that means to bring more actual comfort to his patients by conversation than anyone could have accomplished by means of a most elaborate diagnosis and extensive medication. Dr. Hooker also possessed a keen sense of humor. The late George Circle many years ago gave his celebrated lecture on death before the Roanoke Academy of Medicine. At the conclusion of the address he turned to Dr. Hooker in the front row of the audience and asked if there was anything else he desired to know about death. Dr. Hooker quickly replied that he was not interested in death—he was interested in keeping his patients alive. In another instance he was called down in southeast Roanoke to see a patient. He found the family out in the front yard, screaming and crying. They began to question Dr. Hooker, "Is she going to die, is she going to die?" Without any hesitation Dr. Hooker told them, "Yes, she is going to die, sure she is going to die". As he walked into the house he turned again and added, "But, she is not going to die until her time comes." This quick reply to the family made the situation ridiculous even to the family and their tears immediately turned to laughter. The late Dr. Hugh Trout always remarked that Dr. Hooker should have been employed as the front man for the Mayo Clinic. He would have managed to dispel all despondency and keep all the patients and visitors in good humor. In November 1954 Dr. Hooker received the certificate of The Medical Society of Virginia for being in practice for fifty years. Dr. Hooker suffered a heart attack on January 18, 1963 and five days later he expired. He was married to the late Emma Carper on November 25, 1913.

Dr. Hooker was one of the last of the old school of the horse and buggy doctors. The medication they had to offer could not begin to equal those available today. Despite the limited medical facilities available they were able to bring a large measure of comfort and relief. Certainly they were repaid by the love and respect of their patients. It is indeed a sad commentary on the public and the medical profession that the degree of respect rendered the medical profession has suffered, despite our ability to better relieve suffering. Certainly, Dr. Hooker enjoyed the love and affection of his patients and his passing was deeply mourned.

BE IT RESOLVED that a copy of this tribute to Dr. Hooker be sent to his niece and nephew whom he reared and also that a copy be forwarded to The Medical Society of Virginia, and also that this tribute be placed in the minutes of the Roanoke Academy of Medicine.

HENRY LEE, M.D.

Dr. Emlaw.

Dr. Maynard Robert Emlaw, Richmond, died suddenly, June 29, 1963. He is survived by his wife Lucia Krause Emlaw.

Dr. Emlaw, son of the late Mr. and Mrs. Robert Emlaw of Auburn, New York was born December 21, 1907. He was educated at the University of Virginia, receiving the degree of Bachelor of Science in 1938 and that of Doctor of Medicine in 1939. Dr. Emlaw was an exceptional student and was honored by election to Phi Beta Kappa, Alpha Omega Alpha, and the Raven Society. He was also a member of Phi Chi medical fraternity.

Following graduation Dr. Emlaw interned at the University of Virginia Hospital later becoming Junior Assistant Resident on Surgery and Gynecology. His residency was interrupted by World War II. From 1942 through 1945 he served as Flight Surgeon in the United States Army Air Corps with rank of Captain and during his tour of duty he attended the School of Aviation Medicine in San Antonio, Texas and the University of London School of Tropical Medicine. After the completion of his military service he entered the practice of general medicine in Richmond.

In June 1952 Dr. Emlaw became Medical Director of the Virginia Electric and Power Company and Medical Advisor of the Federal Reserve Bank of Richmond, Fifth District.

Dr. Emlaw was an active member of Bethlehem Lutheran Church, Rotunda Club, American Medical Association, The Medical Society of Virginia, Richmond Academy of Medicine, Southern Medical Association, and the Industrial Medical Association. He was a member of the staff of St. Elizabeth's Hospital, St. Luke's Hospital, Grace Hospital, Richmond Memorial Hospital, and Retreat for the Sick.

WHEREAS, Dr. Emlaw was a gentleman, a scholar, a capable and dedicated physician, a loyal friend, a true Christian, and a devoted husband,

AND WHEREAS, He will be greatly missed by those who had the privilege of knowing him,

BE IT RESOLVED, That we record our sorrow at his passing and convey to his wife our heartfelt sympathy.

BE IT FURTHER RESOLVED, That a copy of this resolution be spread on the minutes of the Richmond Academy of Medicine and that copies be sent to his wife and The Medical Society of Virginia.

LEVI W. HULLEY, JR., M.D., *Chairman*
WILLIAM R. HILL, M.D.
JOHN P. LYNCH, M.D.

Dr. Tucker.

WHEREAS John Randolph Tucker, M.D., has been removed through God's infinite wisdom from this life and our midst April 12, 1963, in his sixty-fifth year, we, the members of the Williamsburg-James City County Medical Society, are grieved upon the loss of our colleague and join with his many patients and associates to share with his family their bereavement.

Dr. Tucker attended Blackstone Military Academy and the College of William and Mary, and was graduated a Doctor of Medicine from the Medical College of Virginia in 1928. He interned and had residency training at the Elizabeth Buxton Hospital, Newport News. He established his practice in Williamsburg in 1930 and founded the Tucker Clinic in 1947. He was president of this society on two occasions. He was a member of the Advisory Committee to the Board of Trustees of the Williamsburg Community Hospital, Incorporated during the planning and organization of this hospital. He was an active member of the medical staff of the Williamsburg Community Hospital, Incorporated.

We feel privileged to have known him, to have been associated with him as a physician and to have been in this society with him. We recognize his dedication to the service and care of the indigent as well as to the more fortunate.

THEREFORE, BE IT RESOLVED on October 9, 1963, that we now assembled convey to his bereaved family our high regard of him and our sympathy in their sorrow, and

BE IT RESOLVED that we honor his memory by placing SURGERY by Richard Warren, M.D. as a memorial in the medical library of the Williamsburg Community Hospital, Incorporated, and

BE IT RESOLVED further that the society record in its minutes our deep regret upon his death, and that this memoriam be sent to Mrs. Tucker and also to The Virginia Medical Monthly.

BAXTER I. BELL, JR., M.D.
CARLTON J. CASEY, M.D.
HUGH G. STOKES, JR., M.D.

Dr. Hayes.

Dr. George W. Hayes was born in Franklin, January 8, 1889. He attended the public schools in Franklin, and graduated from the Franklin Military Academy with honors scholastically, as a debator and orator. He received his M.D. degree from the Medical College of Virginia in 1910. He interned at St. Vincents Hospital (now DePaul) in Norfolk. He engaged in general practice and minor surgery in Franklin, from 1911 to 1918. During 1918, while World War I was in full sway, he was prevailed upon to

practice in Portsmouth, where he enjoyed a large practice until three years ago. He practiced well over fifty years.

As a physician, he was completely dedicated. His heart, mind, soul, and professional talents were directed to all people who were sick and in need of help. His character was one of stability, honor, honesty and integrity. His public relations with all mankind were never questioned. He leaves a host of loyal patients and friends, as all who knew him loved him.

He was elected president of both Boards of Directors and the Staff of Parrish Memorial Hospital several times.

He was a member of Court Street Baptist Church.

As a citizen, he was civic-minded, modest and had a warm friendship for all. He was a member of many fraternal orders, educational and civic organizations—such as the Executive and Kiwanis Clubs.

WHEREAS his passing is a great loss to the Portsmouth Academy of Medicine and the community, now,

BE IT RESOLVED that this Resolution be placed upon the minutes of this Academy, that we extend to his family genuine and heartfelt sympathy and lastly, let the Secretary be directed to send a copy of this Resolution to his widow, with our condolence, and a copy sent to the State Medical Society.

Dr. Kilby.

WHEREAS Edward Butts Kilby, M.D., has departed this life July 18, 1963, in his seventy-third year, we, the members of the Williamsburg-James City County Medical Society, are grieved upon the loss of our colleague and wish to pay tribute to his memory.

Dr. Kilby was graduated a Doctor of Medicine from the Medical College of Virginia in 1915. He practiced in Toano from 1923 until his retirement in 1958. He was a former president of this society on at least two occasions.

THEREFORE, BE IT RESOLVED on October 9, 1963 that we convey to his bereaved family our respect of him and our sympathy in their sorrow, and

BE IT RESOLVED that we place THE PHYSIOLOGICAL BASIS OF MEDICAL PRACTICE by Best and Taylor in the medical library of the Williamsburg Community Hospital, Incorporated as a memorial, and

BE IT RESOLVED further that the society record in its minutes our sorrow upon his death, and that this memoriam be sent to his wife, Mrs. Sally C. Kilby, and his daughter, Mrs. Joseph S. Johnson, Jr., and also to The Virginia Medical Monthly.

U. G. BRADENHAM, D.D.S.
CARLTON J. CASEY, M.D.
HUGH G. STOKES, JR., M.D.

Dr. McDaniel.

WHEREAS, Dr. Eugene Marvin McDaniel, our colleague and friend, was called to his reward on July 12, 1963, and

WHEREAS, we, his fellow physicians, recognizing our great loss and that of the community, wish to pay tribute to his memory by the unanimous adoption of this resolution.

Dr. Eugene Marvin McDaniel was born on March 17, 1900, in Cumberland County, Fayetteville, North Carolina, son of the late David P. and Minerva Sanders McDaniel.

Dr. McDaniel attended High School at Buies Creek Academy, Buies Creek, North Carolina. He graduated from the University of North Carolina in 1927, graduated from the Medical College of Virginia in 1929, and his internship was served at Lewis-Gale Hospital, Roanoke.

Dr. McDaniel served his Country during World War II as Captain of the Medical Unit of the Virginia State Guard in Martinsville.

From 1929 until his demise, he practiced in Martinsville in general practice. He was a member and past-president of the Patrick-Henry Medical Society, and was a member and past-president of the Staff of the Martinsville General Hospital. He was also a member of The Medical Society of Virginia and the American Medical Association.

Dr. McDaniel was a member of the First Baptist Church, was on the Board of Deacons, and was a member of the Men's Brotherhood. He was a member of the Rotary Club, recently made Honorary Member; member of the Chamber of Commerce; member of the Knights of Pythias; and was a Mason and Shriner. He was on the Board of Trustees for the Charles B. Keesee Educational Fund.

WHEREAS, we, his fellow members of the Medical Staff of the Martinsville General Hospital on this the 13th of August, 1963, unite with his many grateful patients and friends to share with his family in their bereavement.

NOW, THEREFORE, BE IT RESOLVED that we convey to his family our sincere sympathy and deep respect for his memory.

BE IT FURTHER RESOLVED that a copy of this resolution be spread upon the minutes of the Medical Staff of the Martinsville General Hospital, a copy published in the Virginia Medical Monthly, and a copy sent to his family.

JOHN P. BING, M.D.

FRANCIS B. TEAGUE, M.D., *Chairman*

Dr. Palmieri.

The death of Dr. Antonio Palmieri at the age of thirty-eight was a tragedy to the Richmond medical

community. Even though he had been in our community only a relatively short time, he had won the respect of his colleagues and the endearing confidence of his patients. We have all sustained a stunning loss in the untimely death of one who seemed destined for a promising and useful career.

Born in Turin, Italy, Dr. Palmieri spent his youthful life in northern Italy, graduating from Badia Fiesolana College of Arts and Sciences with a B.S. degree in 1944 and the University of Florence Medical School with an M.D. degree in 1951. Following a short medical experience in his native Italy, he interned at Hotel Dieu Hospital, New Orleans, Louisiana, 1954-55. In 1955-56 he served a residency in general medicine at Retreat for the Sick Hospital, Richmond. Dr. Palmieri then served a residency in obstetrics and gynecology at Arlington Hospital in 1956-57 and at Doctors' Hospital, Washington, D.C. in 1957-59.

Dr. Palmieri returned to Richmond in 1959 and entered private practice. He was a staff member of Richmond Memorial Hospital and Retreat for the Sick Hospital. He held memberships in the Arlington Medical Society, the Catholic Physicians' Guild, the American Medical Association, The Medical Society of Virginia. He was voted into the active membership of the Richmond Academy of Medicine May 26, 1959.

Dr. Palmieri is survived by his wife, Mrs. Josephine Lupo Palmieri; two daughters, the Misses Rita and Bianca Palmieri of Richmond; a sister and two brothers.

BE IT RESOLVED that this memorial be included in the minutes of the Richmond Academy of Medicine and that a copy be sent to Mrs. Palmieri in testimony of the respect in which Dr. Palmieri was held by the Academy and of the sympathy extended by the Academy to the family of our deceased colleague.

T. R. MACK, M.D., *Chairman*
MAURICE VITSKY, M.D.
PETER ROSANELLI, M.D.

Dr. Porter.

With deep regret, we record the death of our respected member and good friend, Dr. William Oliver Porter, who died suddenly at his home on April 22, 1963, at the age of sixty-two.

Dr. Porter was born in Roanoke, June 22, 1900. He was educated in the Roanoke City Schools, and at Roanoke College. In 1926 he received the degree of Doctor of Medicine from the University of Tennessee College of Medicine. He interned in Memphis, Tennessee.

Dr. Porter began the active practice of medicine in Roanoke, January, 1928, which he continued until

his death. He served as a reserve officer in the United States Army during World War II, and saw service in North Africa and Italy.

He was a member of St. James Episcopal Church, a Mason and a Shriner. He was a member of the Roanoke Academy of Medicine, The Medical Society of Virginia and the American Medical Association.

His devotion to his family, his profession, his patients and many friends will be remembered by all who enjoyed his acquaintance.

Dr. Porter is survived by his widow, Mrs. Ruby Mays Porter, one brother and two sisters.

NOW, THEREFORE, BE IT RESOLVED: That we convey to his widow our sincere sympathy and deep respect for his memory and that a copy of these resolutions be spread upon the minutes of the Roanoke Academy of Medicine, and that a copy be furnished to The Virginia Medical Monthly.

IRA H. HURT, M.D., *Chairman*
W. BANKS HUFF, M.D.
JOHN G. McCOWN, M.D.

Dr. Rich.

Gilbert J. Rich was born in New York City, October 16, 1893. He died April 12, 1963.

In 1917 he became a Doctor of Psychology at the department of Psychology of Cornell University. He taught psychology at several colleges and the University of Pittsburgh, then became research psychologist at the Institute for Juvenile Research in Chicago.

In 1929 he received his medical degree at the University of Chicago and became a fellow at the Institute for Child Guidance in New York City, from where he returned to the Institute for Juvenile Research, now as a psychiatrist.

He was a fellow of the American Psychiatric Association, the American Psychological Association, the American Orthopsychiatric Association and the American Association on Mental Deficiency.

He was the author of forty-nine articles, many of them inquiring into the physiologic or environmental determinants of behavior.

He came to Roanoke in 1950 from the Milwaukee County Guidance Clinic, where he had been director since 1933.

WHEREAS Gilbert Joseph Rich has practiced psychiatry in Roanoke and directed the Roanoke Guidance Center with devotion to his professional ideals, and with an unpretentious skill

BE IT RESOLVED that the Roanoke Academy of Medicine express its deep regret at the occasion of his passing, that this resolution be incorporated in the permanent record of the Academy and a copy sent to Mrs. Gilbert J. Rich.

HANS STROO, M.D.

Guest Editorial

The Doctor Image of Today

IN ANY COUNTRY, the party in power is concerned with the political image it conveys or projects to the general public. Religions sometimes make use of symbols or images or pictures for this purpose. Such religious images or pictures are called icons.

Today, we should be concerned as to what image we physicians convey to the general public. Is the caduceus the icon we would wish it to be? It is our symbol, and we wear it, visibly or unseen, in our daily practice of the healing art. Are we sensitive enough about our badge of integrity? How does the average man evaluate the M.D. behind the hallmark of the Sons of Aesculapius? Are we "iconoblastic" or "iconoclastic"? Whether we are acutely aware of the fact or not, we are iconographic. We either add to or detract from the prestige of medicine. Neutrality is inconceivable, and impossible.

Postgraduate courses, short and to the point, and our own medical meetings at state, district and local levels should help "save us from cramped minds and shriveled souls!" We of the medical disciplines should always feel fortunate by virtue of our high selectivity and essentiality. A physician is, indeed, *twice* a citizen if he fulfills his full medical and citizenship obligations.

"Healing of the whole man" has increasingly become our goal. Medicine and religion work well together. God has given us minds to learn His ways and bodies to perform His services. We need to take time to be whole, complete. Fifty million aspirin tablets per day are taken for the aching heads from the strain and stress of present living. We pause long enough for a couple of aspirins—then we are ready for more rush, stress, strain! The hour 5 P.M. to 6 P.M. has become the "Zero Hour". Pressures when we are fatigued are more devastating to, and more exhaustive of, our personalities. Many of us succumb to the cocktail hour

on this account. A Denver psychiatrist suggested that a few drinks before dinner serve to punctuate the day. The day following the publication of this item, the Denver paper in which it appeared facetiously editorialized that one should make sure that the comma did not become a coma. We need to consider the medical aspects of American habits. Alcohol produces a fantastic unity of body and mind coupled with that simultaneous gratification of opposites that logic and science deny to the sober man. Liquor thus can serve to provide comfortable delusions. Man, for a time escapes the regimentation imposed by reason and restraint. Escapism is thus achieved through the medium of a "glass enclosed tranquilizer". A potent drug requires competent controls; the horsepower of a Martini demands adequate brake linings. Since the cocktail hour is a fact of life, our only recourse is to reckon with it.

This is merely one facet of learning how to heal the *whole man*. The family physician should know the family background as well as possible. He should be conversant with as many members of the family as he can. The confidential doctor-patient relationship must continue if medicine is to be at its best.

We are indeed face to face with the threat of government interference, and an attempt at full governmental control of the practice of medicine. How can we best combat this potential tragedy if politics continues its significant inroads into medical practice? We become wrought up—rightly so—when our senior citizens (65 and over) who enjoy the benefits of the highest level of medical practice in the world are promised free medical care purely as a political or vote-seeking gesture by someone who does not have the compassionate interest in these people as individuals that we as physicians do. All of us are deeply interested in the welfare of the elderly. Why do they have to be pawns in a political chess game where the stakes are YOUR MONEY AND MINE? Even so, we must face the reality of this situation.

We like to think of medicine as an art; we speak of the art of medicine. (Dr. W. D. Haggard of Vanderbilt used to write of "Surgery—Queen of the Arts".)

There is a "law" in the relationship of Art and Society: that it is valuable only when the spiritual life is strong enough to insist on some sort of expression through symbols—for example, the failure to discover a satisfactory symbol for the Holy Ghost has seriously impaired our concept of the Trinity.

Can we think of an impressive iconographical form for the medical profession? Does the caduceus symbolize to the average citizen a man

dedicated to his work because of his love for his fellow man? If not, we have failed woefully somewhere along the line. Do we merely have reasonable belief in the "douceur de vivre", or do our concepts of what is good and perfect become alive and flutter from our hands to help others because we exemplify the best that is in man? Would that this were always so! There would then be a moral bulwark protecting the medical profession from any penetration to which it is so vulnerable today. Let us each ask himself: "What image do I convey or portray on my community screen?" The doctor at the local level is the central cog in this machinery to project a favorable picture to his fellow townsmen. "Am I a helpful icon as the world looks so critically at the doctor of today"? Do my patients regard me as a friend genuinely interested in their personal welfare?

We must, like the eagle, rise above the storm—not acquire the placid disinclination (or "soma") of Huxley. Governmental or socialized medicine will surely come unless we show by our conduct that medicine is in the best hands it can possibly be in—our present doctors of medicine. Again, may we repeat for emphasis, "Is the caduceus the icon we would wish it to be?" Only you—only WE can make it so!

WILLIAM S. SLOAN, M.D.

34 Franklin Street
Petersburg, Virginia

Presidential Address

FLETCHER J. WRIGHT, JR., M.D.
Petersburg, Virginia

THANK YOU AGAIN for the privilege and honor of serving as your president. The experience has been educational as well as gratifying, and, I trust, has made me more humble. I shall treasure the pleasant memories of the year.

Our wives, perforce, are more tolerant of our irregular hours and absence from home than the wives of men in many professions. Most of them have cultivated patience and tolerance which compare with those of Job. This year I am sure my wife's tolerance has been stretched quite thin many times, yet I have heard no word of complaint. The ladies in my office have been most helpful. You should join me in thanking our Woman's Auxiliary, so ably headed this year by Mrs. A. Broadus Gravatt, Jr., for their enthusiasm and work. They will be continuing this next year under the direction of Mrs. James M. Moss. Much has been said about the present "image" of physicians. You may rest assured that the auxiliary is doing a more effective job of trying to improve it than are we. Since they have to live with us, we can readily understand our wives' efforts toward any improvement they might attain—"image", or otherwise.

The essential activities of your society are presented in the efficient, concise and modest way of your Executive Secretary, Bob Howard, in his report published in the September Virginia Medical Monthly. May I urge you to study this and get some idea of what you are getting for your money. The members of Council and the Finance Committee are fully cognizant and appreciative of the economical operation of our society by a staff much smaller than that of states numerically comparable as to membership. I believe it would be appropriate to award the proper

Scot's Tartan to Bob "Mac" Howard! We are most fortunate in our headquarters personnel—Miss Watkins, Mrs. Spring and Ed Smith. It is always a pleasure to visit them and realize how well they keep our affairs in order. More power and many thanks to them. How they put up with so many physicians and can still smile, I do not know.

Your Virginia Medical Monthly, edited by Dr. Harry Warthen, has been acclaimed one of the top state publications, and we are quite justifiably proud of it.

Many thanks are due to the various committees—the backbone of your society. Especially should we thank the Roanoke group, headed by Dr. John Martin, which planned this annual meeting. Your program committee, Dr. Owen Gwathney, Chairman, has planned a scientific program which will speak for itself.

At your last House of Delegates meeting you authorized the formation of a Virginia Medical Political Action Committee. It is now a hard working organization under the able chairmanship of Dr. Thomas B. Edwards of Charlottesville. Tom and his board have delivered the baby, survived the puerperium, and now are nursing a healthy infant. Now they need additional nourishment, which individual physicians in Virginia can and should supply. VaMPAC is not incorporated and money contributed by individuals can be spent in direct efforts to elect specific candidates, with emphasis on congressional elections. It is affiliated with, but not controlled by AMPAC, and each can help the other, both in and out of Virginia. Money contributed by corporations can only be spent for efforts toward political education. Friendly industries and organizations, even though they be incorporated, are at liberty under both State and Federal laws to contribute funds for this political educa-

Presented at the annual meeting of The Medical Society of Virginia, Roanoke, October 6-9, 1963.

tion. The board of VaMPAC keeps such contributions entirely separate so that there will be no confusion here. A number of our members have joined VaMPAC, but the number is still relatively small. Possibly you are well aware that we are fortunate in having our Senators and a large majority of our Congressmen who are staunch supporters of the Free Enterprise System, and indeed we are blessed in this respect. Other states are not so fortunate. Powerful influences have selected as prime targets for eliminating certain members of our delegation in Washington. Some of our friends are reaching the age when they would like to go south across the Potomac and not have to head back in that Monday morning traffic. You cannot deduct contributions to VaMPAC from your income tax, nor will you be able to forget present apathy when a future Welfare State has been accomplished. The philosophy of most physicians, as such, and that of the grand Commonwealth of Virginia are so similar—and both are proud heritages! You have no finer representative of our way of life than your governor, Hon. Albertis Harrison. At present Virginia is considered a conservative state. If you are interested in keeping it that way, work and money are quite necessary.

In a number of states, professional men have banded together, first in Michigan, with the help of Mr. Hugh Brenaman, Public Relations Director of its Medical Society. These groups are now united in preserving what we had thought to be the American way of life until the "New Frontier" arrived. Their efforts are entirely from an educational standpoint—no direct political action; however, from this cooperation can derive a potent influence toward conservatism. The Virginia Association of Professional Engineers has investigated these organizations quite thoroughly and has invited The Medical Society of Virginia to join them in establishing a Virginia Association of Professions. Your council considered this at its September meeting and authorized the appointment of two members to proceed

toward development of such a group and report back to the council. These appointments have been made. At no time in the past has there been as urgent a need for formation of such a group with similar interests as now.

County and other component societies are the backbone of organized medicine. American Medicine is, and has been for some time, the target of attacks by various politicians, unions and other groups. Your state society is formed by the various component societies, just as is the A.M.A. from state societies. A county society cannot exert much influence except in that county, and the same applies to the state level. The AMA has come of age and truly is representative of American physicians. Not all agree with all of its policies, nor do all physicians always agree on anything—not even in this House of Delegates. It must be agreed, however, that at no time in the past has the AMA wielded such influence, or created such a bond among American physicians. Some of our members have expressed valid objections to certain actions and policies of the AMA, but none can deny the over-all progress it has generated for American medicine. Recently information has reached me to the effect that only about two-thirds of our members belong to the A.M.A.—in this respect we are at the bottom of the pole, comparatively speaking. Even in the War of Secession Virginia realized it could not go it alone! May I urge you to check on your membership status. This *is* tax deductible.

The American Medical Association Education and Research Foundation has established a Loan Fund to aid needy medical students, interns and residents. In the first 16 months of operation ending June 30, 1963, 16 loans totaling \$16,200 had been made at the Medical College of Virginia, and 27 loans adding up to \$29,300 at the University of Virginia. Through banking arrangements, each dollar contributed to this fund can secure \$12.50. Any help we can

contribute toward these loans will be a part of the roadblock to State Medicine.

For the coming year, you have selected a professional to follow this amateur. You are most fortunate in the ability of Dick Palmer. Best wishes to him in his efforts!

I do not feel I should conclude any remarks to such a group as this without expressing a thought of concern. In our efforts to increase medical knowledge, to give our

patients better medical care, and in our attempts to preserve the Virginian and American ways of life, we might give pause and think of what has been called "Medical Ethics". There would be no problems here if each would "Do unto others as you would have them do unto you."

49 South Market Street
Petersburg, Virginia

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The Virginia Medical Monthly goes to members of The Medical Society of Virginia (3157 as of September 30th). An average of 85 copies are sent to advertisers and their agents. We have a non-paid controlled circulation of 134—these copies go to medical libraries and exchange copies for other medical journals. We keep a file of about twenty copies in this office. We have not kept a monthly file on our circulation as this only varies with the increase or decrease in our membership and advertising in the Virginia Medical Monthly.
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See note under "B."
- I certify that the statements made by me above are correct and complete.—E. Spencer Watkins, Business Manager.

Glomus Tumors of the Stomach

JAMES D. SPRINKLE, M.D.

Danville, Virginia

IVAN L. HOLLEMAN, JR., M.D.

Winston-Salem, North Carolina

Glomus tumor of the stomach is an unusual lesion. A new case is reported and those recorded in the literature are reviewed.

THE OCCURRENCE of glomus tumor in the distal extremities and nail beds is well recognized. However, glomus tumor of the stomach is unusual and has received little attention in the literature, a total of thirteen cases having been reported. It is the purpose of this paper to document the fourteenth case, to summarize those cases previously reported, and to emphasize the clinical homogeneity of the tumors as a group.

Case Report

Mrs. I. V. D., a 63-year-old white female, was admitted to the North Carolina Baptist Hospital on March 8, 1962, with a chief complaint of "stomach trouble" of two years' duration. The patient experienced fullness, eructation, and a vague epigastric burning pain with food ingestion. She denied vomiting, gastrointestinal blood loss, jaundice, or weight loss. Her symptoms had not been relieved by antacids, antispasmodics, or dietary measures.

Abdominal hysterectomy and appendec-

At the time of submitting this manuscript, Dr. Sprinkle was Resident in Surgery, Bowman Gray School of Medicine of Wake Forest College and the North Carolina Baptist Hospital.

HOLLEMAN, IVAN L., JR., M.D., *Instructor in Pathology, Bowman Gray School of Medicine of Wake Forest College.*

tomy had been performed in 1944 and radical mastectomy in 1959 for adenocarcinoma of the left breast without axillary metastasis. Diabetes mellitus of the adult obese type was readily managed.

On physical examination, the patient was obese with a blood pressure of 210/70, and a pulse rate of 72/min. There was a healed left mastectomy scar without evidence of



Fig. 1. Ulcerated glomus tumor along greater curvature aspect of antrum as seen in upper gastrointestinal x-ray study.

recurrent tumor. No abdominal organs or masses were palpable.

Laboratory findings were reported as: blood urea nitrogen 11 mg.%, fasting blood sugar 106 mg.%, carbon dioxide combining power 22.5 meq./L., chloride 110 meq./L., sodium 146 meq./L., and potassium 4.3

meq./L. The hemogram was normal except for a hemoglobin of 9.3 gm.%. The chest x-ray, cholecystogram, and electrocardiogram were normal. On upper gastrointestinal x-ray studies, a 3.5 cm. filling defect with mucosal ulceration and sinus tract formation was observed in the gastric antrum along the greater curvature. (Fig. 1) These radiographic details were well demonstrated in the spot film. (Fig. 2) Analysis of an



Fig. 2. Spot film of gastric glomus tumor in which ulcer and sinus tract are demonstrated.

unstimulated fasting gastric specimen was reported as positive for free hydrochloric acid and occult blood. Gastric cytology was Class I.

Celiotomy was performed on March 9, 1962, and an intramural tumor was found in the distal gastric antrum adjacent to the greater curvature anteriorly. The lesion appeared to be well margined and was excised locally. Frozen section was interpreted as "probably carcinoid". On the posterior-superior aspect of the right lobe of the liver was an elevated area inaccessible for open biopsy. A specimen obtained by needle biopsy was inadequate for diagnosis. Cholecystectomy was performed because of cholelithiasis.

The postoperative course was complicated

by wound infection secondary to beta-hemolytic streptococcus. Convalescence was otherwise uneventful and gastrointestinal symptoms have been relieved.

Macroscopic examination of the removed specimen revealed a 5.8 x 4.5 x 3.2 cm. segment of gastric wall containing a well circumscribed submucosal mass which measured 3.2 x 3.0 x 2.5 cm. This mass appeared encapsulated except for the area immediately underlying the mucosa. A mucosal ulcer 0.4 cm. in diameter extended as a sinus 0.9 cm. into the underlying mass. (Fig. 3) The

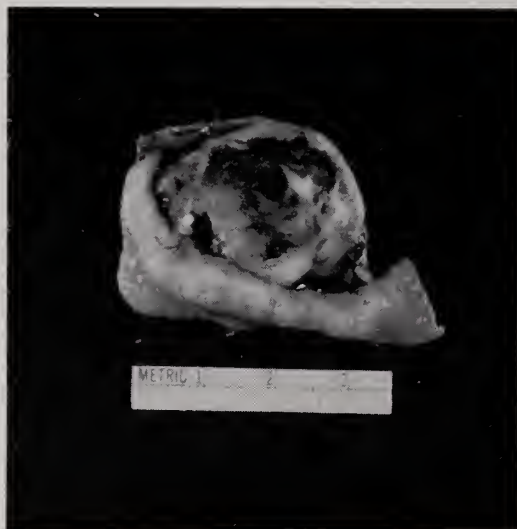


Fig. 3. Gross section of gastric glomus tumor through ulcer.

mass was soft and had mottled red and gray cut surface.

Microscopically, most of the submucosal tumor was enclosed by a fibrous capsule and smooth muscle of the gastric muscularis externa. Immediately underlying the mucosa the tumor was confined by the muscularis mucosae. An ulcer extended through the mucosa into the tumor. The mass basically consisted of multiple endothelial lined sinusoidal vascular spaces of variable size and shape surrounded by masses of epithelial-like glomus cells. These cells were small and polygonal, with eosinophilic cytoplasm, fairly distinct cell borders, and fairly uniform, generally rounded, moderately chromatic nuclei. In areas these cells comprised most of the tissue between the vascular spaces, and

bordered on the endothelium. In other areas the tissue between the vessels was composed of varying amounts of eosinophilic material appearing to be edematous fibrous connective tissue. In this tissue glomus cells were scattered individually and in clusters. (Figs. 4, 5, 6) Reticular fibers surrounded the

were males and two were Negroes. Although symptoms commonly were vague and non-specific, significant gastrointestinal bleeding was present in 6/14 and massive in 3/14. The tumor had a topographic predilection for the distal antrum along the greater curvature and repeatedly was in an intramural

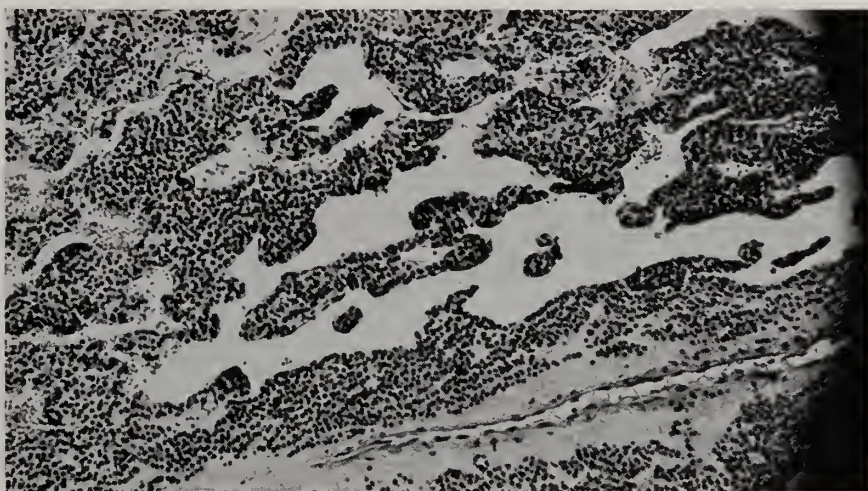


Fig. 4. Microscopic section of gastric glomus tumor. (Hematoxylin & Eosin x 127)

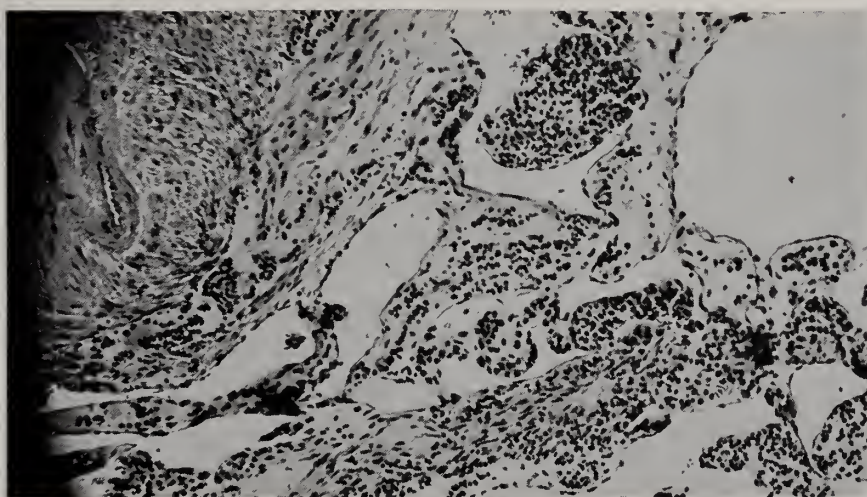


Fig. 5. Microscopic section of gastric glomus tumor. (Hematoxylin & Eosin x 127)

endothelial lined spaces and extended as a network between the glomus cells.

Discussion

The thirteen previously reported cases of gastric glomus tumor and this case are summarized in Table I.

All cases reviewed, except one, occurred beyond the age of 40 years. Eight patients

or submucosal location. The lesion was usually red-tan to gray-pink in color and commonly 2.5 - 3.0 cm. in diameter. Ulceration of the overlying mucosa was present in 7/14 and accounted for the six cases of significant gastrointestinal bleeding. The tumor was fairly well circumscribed and partially encapsulated with minimal local extension in most cases. Complete encapsu-

TABLE I

AUTHOR YEAR	Age Sex, Race	Signs and Symptoms	Location	Gross Appearance	Encapsulation	Radiology	Surgery	Frozen Section
Kay et al., 1951 (3)	50M	obstruction	lesser curvature	reddish ovate body 10 x 6 mm.	partial	carcinoma of pylorus	gastroenterotomy, exc. node	
	43WM	vomiting, pain p.e., shock, hematemesis	pylorus, anteriorly	submucosal, vascular, ulcerated, 3 x 2.5 x 4 cm.	partial	tumor or bezoar	local excision	
	46M	melena x 3 years, 11 times	2 cm. proximal to pylorus posteriorly near lesser curvature	grey-pink mass, ulcer- ated, 3 cm. diameter, in submucosa and muscularis	yes	narrow antrum possible ma- lignant ulcer- ation	Hofmeister gastric resec- tion	glomus
Spangler 1953 (9)	67WM		antrum	cystic, 1500 cc. fluid			Billroth II	glomus
Allen and Dahlin 1954 (1)	47NF	syncope, melena, anemia	5 cm. proximal to pylo- rus, greater curva- ture, anterior wall	intramural mass, grey- tan, ulcerated 2.5 cm. diameter	yes		local excision	
	42NM	intermittent abdominal pain	angle lesser curvature	smooth, friable mass 2.5 cm. diameter	local extension	intramural tu- mor at angle	enucleation, chol- ecystectomy	
Mannix et al., 1955 (4)	53WM	anorexia, heart burn, syncope, massive hematemesis	prepyloric, greater curvature, posteriorly	nodular mass, tan ulcerated 34 x 12 mm.	poor	prepyloric ulcer greater curvature	Billroth I	probably carcinoid
Rubens Duval 1956 (7)	48F	pain, hematemesis, melena	antrum, greater curvature	4 cm. diameter old ulceration	no	prepyloric fill- ing defect, gr. curv.	gastrectomy	
Bonneau 1956 (*)	68F	pain	antrum	3 cm. diameter			local excision	
Shocket et al., 1957 (10)	65WM	fatty food intolerance 10 lb. wt. loss	antrum, greater curv- ature, posteriorly	firm mass, reddish-tan, 2 x 3 x 2 cm.	partial	antral filling defect	local excision	carcinoid
Donovan et al., 1958 (2)	69WF	nausea, vomiting, vertigo	antrum, greater curvature	intramural mass, reddish- tan, 3 x 2.5 cm.	fairly well cir- cumscribed	benign intra- mural tumor, antrum	local excision	glomus
Lambling Martin 1960 (5)	48M	epigastric pain	antrum, anteriorly	spherical, firm, 2 x 2 cm., in submucosa and muscularis	no	benign antral polyp	2/3 gastric resection	mucous carcinoma
Ruding & Harmsen 1962 (8)	38F	abdominal pain, melena	antrum, anteriorly near greater curvature	submucosal mass, light grey, ulcerated, 2.0 cm. diameter	yes		Billroth I	
Spinkle & Holleman 1962	63WF	fullness and epigas- tric pain with food ingestion	antrum, anteriorly near greater curvature	intramural mass, red-tan, ulcerated 2.5 x 3.0 x 3.2 cm.	partial	ulcerated fill- ing defect distal antrum	local excision	probably carcinoid

*Cited from Lambling-Martin.

lation was recorded in two cases. Radiographic interpretation varied from peptic ulceration to filling defect and in no instance was the specific diagnosis suggested by the radiologist. Local excision was performed in 8/14 and gastric resection in 6/14. Frozen section was interpreted as glomus tumor in three cases, as carcinoid in three cases, and as carcinoma in one case.

of the stomach is a well defined lesion. In cases of antral filling defects associated with mucosal ulceration, glomus tumor as well as leiomyoma, polyp, adenocarcinoma, carcinoid, and heterotopic pancreas should be considered preoperatively. Such cases will require surgical exploration from the standpoint of massive or recurrent gastrointestinal hemorrhage, diagnosis and therapy of a dis-

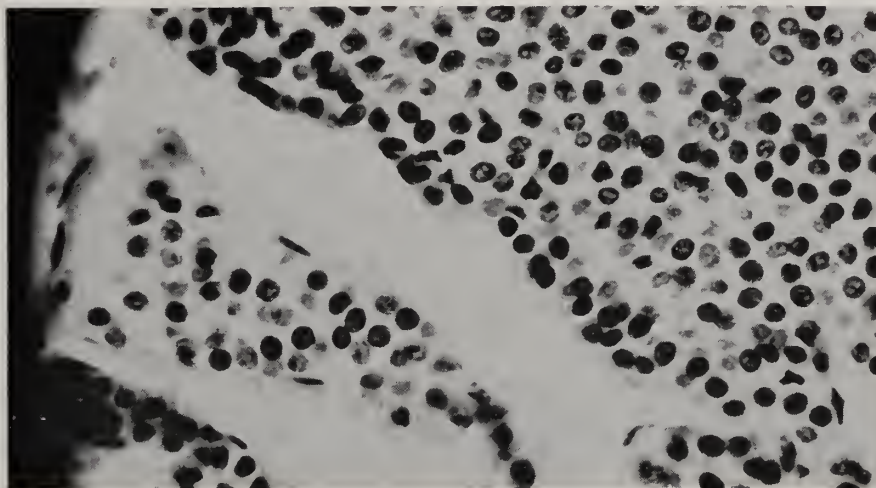


Fig. 6. Microscopic section of gastric glomus tumor. (Hematoxylin & Eosin x 480)



Fig. 7. Microscopic section of cutaneous glomus tumor. (Hematoxylin & Eosin x 127)

The tumor described by Spängler differed anatomically from the others here reviewed in that it was larger (20 x 16 x 10 cm.), cystic, and contained 1500 ml. of fluid. We chose, however, to include this tumor because the recorded microscopic findings were suggestive of glomus tumor.

Although apparently rare, glomus tumor

tal gastric lesion, or both. All the above lesions can be differentiated by frozen section, carcinoid being the tumor most likely to be confused with glomus tumor. Two major factors may lead the pathologist to erroneously interpret a glomus tumor as carcinoid on the basis of frozen section. One is the close histologic similarity of the glomus

cells and carcinoid cells. The second is failure of the pathologist to consider glomus tumor in his differential interpretation. The pathologist should be able to differentiate, however, if he is aware of the possibility of glomus tumor and is familiar with the characteristic gross and histologic features of that lesion. The gastric glomus tumor has the same basic histologic structure as the cutaneous glomus tumor. (Fig. 7)

The gastric glomus tumor is well circumscribed and benign both grossly and microscopically; however, since it is frequently incompletely encapsulated, simple enucleation probably is not adequate treatment. On the basis of this review it appears that reasonably wide local excision is the treatment of choice.

Summary and Conclusions

Although glomus tumor of the distal extremities and nail beds is not uncommon, glomus tumor of the stomach is unusual and the diagnosis is rarely entertained by either surgeon or pathologist. In the reported cases of gastric glomus tumor, the common clinical features have been: (1) intramural location in the distal antrum, (2) mucosal ulceration and gastrointestinal hemorrhage, (3) size of 2.5 - 3.0 cm., and (4) occurrence over the age of 40 years. These findings are sufficiently characteristic to lead one to consider this lesion in the differential diagnosis preoperatively.

Histologically, the tumor is composed of epithelial-like glomus cells and prominent endothelial lined vascular spaces, and is basically like the cutaneous glomus tumor. The

pathologist who considers the possibility of glomus tumor of the stomach, and is aware of its histologic characteristics, will make the diagnosis. Lastly, this is an incompletely encapsulated benign tumor which may be adequately treated by moderately wide local excision.

Acknowledgment: We are indebted to Dr. Modesto Scharyj, Instructor in Pathology, for his assistance in the translation of the foreign manuscripts.

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Hyperchloremic Acidosis Following Ureterosigmoidostomy

Report of a Severe Case with Coma

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This syndrome develops following ureterosigmoidostomy and may be mistaken for terminal uremia. It is reversible, however, and subsequent episodes are easily prevented.

A FIFTY-YEAR-OLD WHITE FEMALE was admitted to hospital on June 30, 1960, for the first time because of coma. She had been in good health up until approximately twenty years prior to admission. At the age of thirty, childbirth was complicated by a urethrovesicovaginal fistula. Repeated attempts at repair of that lesion being unsuccessful, a bilateral ureterosigmoidostomy was performed in 1942. The postoperative course was uneventful, and general condition had remained satisfactory until approximately twelve years prior to admission at which time the patient developed a rather severe degree of rheumatoid arthritis with involvement of joints of hands, knees, and shoulders. Steroid therapy was started and had been continued in smallest possible amounts up until admission to this hospital. Five days prior to admission the patient developed severe headache and had to be given Demerol and Codeine by her family physician. Nourishment was refused and patient gradually became weaker, disoriented, and unable to perform motor function. Shortly prior to admission, the

patient became comatose. There had been no vomiting or diarrhea.

Physical examination on admission revealed a redheaded, comatose, white female whose eyelids were puffy, and there was a definite tendency toward the so-called moon facies. The neck was definitely stiff. The chest revealed nothing but shallow respiration. The extremities were flaccid. There were typical rheumatoid joint deformities of the hands, fingers, and knee joints.

Admitting laboratory studies revealed a glucose of 88 mgs.%, a non-protein nitrogen of 70 mgs.%, a serum sodium of 120 meq./L., a serum chloride of 122 meq./L., a serum potassium of 2.5 meq./L., and a CO₂ combining power of 1 meq./L. The spinal fluid was normal.

Treatment consisted of 1/6 molar sodium lactate and potassium phosphate intravenously. Six hours following admission, the serum sodium was 135 meq./L., serum chloride was 113 meq./L., serum potassium was 2.5 meq./L., and CO₂ combining power was 14 meq./L. With continued electrolyte replacement therapy, the patient began moving all extremities, became oriented, and thereafter her progress was entirely uneventful with complete recovery from the phenomenon noted on admission. At time of discharge an oral potassium preparation was prescribed, and the patient was advised to restrict salt and discontinue steroid therapy entirely.

Four months later, the patient was readmitted to the hospital because of drowsiness and confusion. She had apparently resumed steroid therapy following the first

admission and had felt quite well up until two days prior to admission at which time she fell for no apparent reason and injured the right knee slightly. Following the fall the patient became progressively weaker and shortly prior to admission the husband noted the patient was disoriented and confused.

Physical examination revealed obvious impending coma. Admitting laboratory studies revealed a non-protein nitrogen of 73 mgs.%, a serum sodium of 120 meq./L., a serum chloride of 116 meq./L., a serum potassium of 3 meq./L., and a CO₂ combining power of 7 meq./L.

The patient was given 1/6 molar sodium lactate intravenously and responded rather promptly. When discharged four days later the non-protein nitrogen was 40 mgs.%, a serum sodium was 140 meq./L., a serum chloride was 119 meq./L., a serum potassium 4.3 meq./L., and CO₂ combining power was 24 meq./L.

Comments

Ureterosigmoidostomy was first performed successfully in 1892, but it was not until 1931 that Boyd¹ first called attention to acidosis as a possible sequel to the operation.

In 1947 Marshall², in discussing transplantation of the ureters and total cystectomy, wrote as follows: "If the ureters are transplanted to the bowel above a normal anal sphincter, the patient does not need apparatus, is socially acceptable, and except for the necessity of sitting to urinate which half the population does naturally, appears outwardly normal. However, the problem is not simple because the immediate and late risks of uretero-intestinal anastomosis are not only greater but are usually a more grave importance than after skin transplantations." The normalcy which these patients enjoy may be the cause for one of the serious complications of the procedure.

Ferris and Odel³ defined a clinical syndrome characterized by hyperchloremic acidosis in 1950 as a result of a study of 141

patients following ureterosigmoidostomy. The clinical manifestations were easy fatigability and weakness, soon followed by anorexia, nausea, and vomiting. Typical cases showed nitrogen retention, elevated serum chlorides, and low carbon dioxide combining power. In a majority of their cases, the value for urea in the blood was elevated above normal. Seventy-nine per cent of their series manifested some degree of hyperchloremia. The highest value for chloride in plasma was 131 meq./L. Using 23 to 27 meq./L. of bicarbonate as a normal range, 80 per cent of 141 patients showed laboratory evidence of acidosis of some degree. The lowest value for bicarbonate ion in plasma was 6.1 meq./L. In their series they were able to demonstrate a return to normal blood levels during anal incontinence, rectal lavage, or the maintenance of rectal tube drainage to prevent prolonged contact of the excreted urine with the bowel wall. These authors concluded that changes characteristic of this syndrome occurred as a result of absorption of chloride across the rectal mucosa from urine stored in the rectum and sigmoid.

The mechanism of disproportionate chloride reabsorption is not completely understood. Many possible explanations have been advanced. One possibility is that some urea is split by bacterial action in the bowel to form carbon dioxide and ammonia. The ammonia then combines with chloride ion and is absorbed as ammonium chloride. The absorbed ammonia would then be converted by the liver to urea. The increased serum concentration of chloride and urea result in a compensatory diuresis, a consistent feature of this severe acidosis.

Foster⁴ points out that the ratio of sodium to chloride in the extracellular fluid is 1 to 0.7 in contrast to the 1 to 1 ratio in the sodium chloride molecule. If the chlorides were absorbed as sodium chloride, there would still be a preponderance of chloride in the serum and potentially a hyperchloremic acidosis.

Kekwick⁵ suggested that the imbalance is

due to renal tubular damage with impaired chloride excretion caused by back pressure from the colon.

The hypopotassemia has been attributed to the increased potassium loss associated with acidosis and diuresis. A case reported by Diefenbach et al⁶ manifested complete flaccid quadriplegia and had the typical electrocardiographic findings of hypopotassemia. Both the electrocardiographic changes and the quadriplegia completely disappeared shortly after the administration of potassium chloride.

The severity of the case here reported can be appreciated by comparing symptoms and blood chemical findings with those of cases already recorded in the literature. Wilkinson⁷ reported a fatal case and Parsons⁸ reported four fatal cases. Progressive dehydration with eventual anuria characterized the terminal phase in the reported cases. Rosenberg and Elliott⁹ reported a case, comatose on admission, with blood chlorides of 131 meq./L. and a plasma bicarbonate of 3.6 meq./L., but an emergency nephrostomy was required preventing long term study. Of the 141 cases reported by Ferris and Odel³, only nine had blood chloride levels of 120 meq./L. or over, the highest being 131 meq./L. My case showed a level of 120 meq./L. on first admission and 116 meq./L. on second admission. One of their cases had a plasma bicarbonate of 6.1 meq./L. None of the other cases had a level below 9 meq./L. My patient's lowest reading was 1 meq./L. on first admission and 7 meq./L. on second admission. Cases with very low CO₂ combining power have also been reported by Cordonnier¹⁰ (5.2 meq./L.), Parsons⁸ (6 meq./L.) and Foster⁴ (6 meq./L.).

One of the most interesting and unusual feature of this case was the prolonged steroid therapy for rheumatoid arthritis in a patient with a tendency to have an altered electrolyte pattern by virtue of the ureterosigmoidostomy. During first admission it was thought that steroids had probably contributed, or had aggravated dis-

turbed electrolyte pattern by retention of sodium and chloride and excretion of potassium and, accordingly, the patient was advised to discontinue steroids. In investigating this problem further, many arguments favoring the continuation of steroid therapy were found. It is generally agreed that the most important electrolyte abnormality resulting from steroid administration is the production of a hypokalemic, hypochloremic metabolic alkalosis. This is brought about by, initially, sodium and chloride retention with retention of sufficient water to maintain isotonicity. The retention of sodium results in some expansion of bicarbonate in the anion column in order to maintain electroneutrality. There is loss of chloride ion with resultant hypochloremia. The excess sodium with hydrogen ion shifts into cells, replacing intracellular potassium. The sodium shift into the cells results in displacement of potassium to extracellular water in the interest of intracellular electroneutrality. Potassium, being in excess in extracellular water, is promptly excreted, resulting in potassium depletion. From a theoretical standpoint the hyperchloremic acidosis produced by the ureterosigmoidostomy was probably partially offset by the steroids which tended to produce hypochloremic alkalosis. The hypokalemia was probably intensified by both the ureterosigmoidostomy and steroid therapy.

Since 1960 the patient has been followed as an outpatient at regular intervals and has been relatively asymptomatic. The levels for plasma chloride have varied from 108 to 124 and the bicarbonate levels have ranged from 18 to 24 meq./L. The non-protein nitrogen has been fairly stable between 38 to 40 mgs. %.

The prophylactic treatment for this condition has been quite simple and very successful. The patient has been encouraged to empty her rectum frequently so that the time urine is in contact with the rectal mucosa is minimized. Salt intake has been reduced in order to reduce chlorides and sodium bicarbonate has been prescribed to

supply the necessary sodium. The patient has continued minimal maintenance dosage of steroid for rheumatoid arthritis without apparent complications.

Summary

A case is reported showing severe coma as a manifestation of reabsorptive hyperchloremic acidosis associated with ureterosigmoidostomy. Some theories as to causation of the changes characteristic of this syndrome are briefly reviewed. Present evidence suggests that some cases of hyperchloremic acidosis secondary to ureterosigmoidostomy occur entirely on the basis of reabsorption from the colon of chloride and urea or ammonia. There certainly may be some renal tubular damage added.

The severe nature of this case is emphasized by comparing symptoms and blood chemical findings with those of cases already recorded in the literature.

An interesting side light in this case is the problem of steroid therapy for rheumatoid arthritis in a patient with a tendency to have an altered electrolyte pattern by virtue of the ureterosigmoidostomy. The therapy is that of providing adequate rectal drainage and preventing prolonged exposure of the urine to the colonic mucosa. Salt restriction and supplementary sodium bicarbonate and potassium should be emphasized and given careful attention.

The most important thing from the standpoint of physician is an awareness of the odd features of this syndrome in order

that it be diagnosed and treated and not misinterpreted as representing progressive uremia due to irreversible renal damage.

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Chemotherapy in Rheumatic Fever

Comparison of statistics obtained on military selectees during 1941 and 1962 reveals a 63% decrease in the incidence of rheumatic valvular heart disease and a 37% decrease in the diagnosis of congenital heart disease. The decrease in rheumatic heart disease is attributed primarily to the prophylactic and therapeutic use of antibiotic and chemotherapeutic drugs.—Basil M. RuDusky, M.D., in *J.A.M.A.*, September 28, 1963.

Seven Medical Proposals to Promote Highway Safety

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Highway safety is the concern of all—as citizen and as physician. Seven proposals are advanced and discussed by one who has given the subject much time and thought.

FOR THE PAST FIFTEEN YEARS I have studied the problem of the rising tide of deaths and injuries on the highways of the United States largely from a medical viewpoint. A distillate of this study is presented here in the form of seven medical keys or proposals which, I believe, would diminish this carnage by 50 per cent or more if adopted and utilized by our various states.

My own State of Virginia with a population of approximately 4 million people has 2 million licensed drivers and the number is increasing at the rate of 200,000 per year with little or no medical evaluation or periodic supervision as to their physical or mental fitness to drive a motor vehicle. Since it is practically impossible to require a medical certificate for licensure of all applicants an alternative method of medical supervision is presented. As a result of our present laws and customs we will kill approximately 1,000 people this year and injure 25,000. It is evident that something must be done now to combat this increasingly tragic toll.

It is the physician's duty to inform the public and its legislative representatives of

the seriousness of automotive injuries, for the public is not as yet interested enough to do anything (probably because of the very human trait of believing that such things only happen to the other fellow and because of its indifference to statistical figures and slogans).

If the seriousness of this problem as it exists today were realized by the public, it could perhaps be aroused from its complacent attitude to demand that legislators do something now to salvage many thousands of this present generation from death and the crippling injuries which will otherwise occur. Fortunately, the medical profession even now, as a result of its still incomplete and meager research studies, can point the way to remedies which could cut this tragic toll by perhaps 50 per cent or more. These remedies are embodied in the following seven proposals and have been unanimously endorsed in principle by the Albemarle County Medical Society, the Virginia Academy of General Practice, the Council of The Medical Society of Virginia, the Virginia State Department of Health and numerous other medical groups interested in this problem. These proposals have been presented to a Committee of the Virginia Advisory Legislative Council for study and transmission to the Virginia State Legislature.

Among the statistical facts which the public should know are the following. There are approximately 79,000,000 cars on our highways today. Since this number is increasing rapidly along with higher speed limits and more complex traffic patterns, the number of deaths and injuries can also be expected to increase in the same proportion in the future. There were last year

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41,000 deaths and 5,000,000 injuries in the United States. Twenty per cent of these injuries were classified as from severe to critical and the repair of these injuries is one of the most frequent surgical procedures performed today. In all our wars less than one million men have been killed, while the automobile counted its one millionth victim more than five years ago and now averages 2,000 deaths a year from automotive crashes in the Armed Services alone. The leading cause of death in this country today is cardiovascular disease; the second is cancer, but close behind are deaths due to automobile accidents if figured on the man-years of life lost, for the first two are primarily diseases of the older age groups, whereas the death rate from automobile accidents is highest in youth.

If doctors had waited until all the facts were known before starting on the control of such scourges as smallpox, typhoid, diphtheria, malaria, syphilis, and poliomyelitis, for example, their control would have been long delayed. We realize the importance and need for basic research in the ultimate solution of this problem, but until such facts are at hand we can use the remedies we now have in a practical, clinical way. We can immediately begin the control of this number one problem and at the same time point out, carry on, and encourage basic research in all the many phases of this problem in order to hasten its final solution.

As a result of our studies we know that the greatest number of deaths are caused by the driver who has been drinking. He accounts for one-third of the crashes and 50 per cent or more of the deaths. Next in frequency is the speeding and reckless driver who accounts for approximately 30 per cent or more of the deaths. The remainder are caused by many things such as mechanical failure, physiological states such as sleep and fatigue, pathological conditions as epilepsy, diabetes treated with insulin, cardiovascular disease, drugs, and emotional disturbances at times, and also many other conditions too numerous to mention at this point.

As a result of the Cornell crash injury studies and other similar studies we know that in order of occurrence the most frequent sources of death or injury are from: the steering assembly, ejection, dashboard and windshield, and the back of the front seat, etc. The most frequent body areas affected are: (1) the head and neck, (2) the chest, and (3) the extremities, etc.

To partially solve this problem we as physicians and citizens should like to offer the following seven proposals.

I. Education

A driver training course approved by the State Board of Education given by approved instructors should be provided in all public, private, and parochial schools. Similar courses should be provided for adults, especially those applying for driving permits for the first time and for those whose permits have been revoked by the court and who have been ordered to complete such a course before a new permit will be issued. A certificate from such a course should be one requisite for driving licensure. If additional funds are needed for such courses in our schools, they can be provided by a higher application fee which amount would be compensated for later by lower insurance company rates. In the present overcrowded school curricula time and space could be furnished by omission of many courses now offered which are of doubtful value. In addition to the didactic lectures with particular stress on drinking and driving, recklessness, and the use of seat belts and shoulder straps, behind-the-wheel instruction should also be provided. If an instructor notes any physical or mental disorder which might impair driving skill he should advise the student to consult his family doctor, who in turn, if necessary, would report his findings to the local Health Department for filing. A youngster having successfully completed such a course could apply for licensure at age 16. Otherwise, 18 years should be the minimum legal age for licensure.

II. Licensure

All first time applicants for driving licensure and those applying for renewal after revocation by the court in which a driver training course has been ordered must present a driver training course certificate. They must also present a certificate from the State Department of Health stating that they have no record of any physical or mental disorder which would impair driving skill.

Those 65 years or older, those driving passenger carrying buses and those driving certain categories of commercial vehicles in which a physical examination is required must also present a certificate of physical and mental fitness from their family physician. This examination must be repeated at each renewal date.

All applicants should have the right to appeal to a medical referral committee, whose verdict would be final, as to whether he could drive under a medically restricted permit, an unrestricted permit, or should be denied the privilege of driving a motor vehicle.

A guide as to the determination of fitness is furnished by the "Medical Guide for Physicians in Determining Fitness to Drive a Motor Vehicle" published by the American Medical Association, March 14, 1959, Volume 169, page 1195.¹

These certificates would permit the police to confine their examination to the applicant's knowledge of traffic signs, laws and signals and his ability to drive in traffic and to park.

III. Medical Referral Committee

A medical referral committee approved by the State Commissioner of Health should be established by all medical component societies of the State society.

This committee would be composed of three or more general practitioners or internists with consultants available in neurology, psychiatry, ophthalmology, otology and orthopedics. They would receive fees

for their services. Their duties would be to test the physical or mental fitness to drive of those referred by the courts, such as repeat offenders, those referred by the Commissioner of Health in certain instances and those who wish to appeal the revocation of their license by the Commissioner of Motor Vehicles.

Since it is estimated that there are some 40 million people with hidden medical defects, such as the two million diabetics and two million epileptics, it is imperative that some medical supervision should be employed. It is not considered practical to require physical examinations for the 91 million drivers in the United States.

Using the A.M.A. booklet "Medical Guide for Physicians in Determining Fitness to Drive a Motor Vehicle", Journal A.M.A., March 14, 1959, Volume 169, page 1195,¹ as a guide, the physician will be required by law to report any physical or mental disorders to his local health office of which he may have knowledge or have observed which in his opinion would impair driving skill. This report also includes those referred by driver training course instructors if such disabilities exist.

The conditions which are most likely to impair driving skill have been summarized by the Medical Safety Commissioners of Kentucky and Pennsylvania. Using the Medical Guide they list ten categories of disorders the reporting of which would be mandatory. In Virginia we suggest reporting to the local health department. They would transmit these reports to the State Health Department. They in turn, after study, and, if necessary, modification and classification, transmit them to the State Motor Vehicle Commissioner. If adverse, he then notifies the driver that he must either drive under a specific medically restricted permit or for other more serious conditions his permit will be revoked in ten days. The aggrieved motorist can then either relinquish his permit or ask for a review examination by his local medical referral committee whose verdict is final.

The ten categories singled out by the Kentucky and Pennsylvania Commissioners which were culled from the A.M.A. Guide are:

Kentucky:

1. Mental Retardation—below the level for reading ability.
2. Neuromuscular Defects where suitable compensation has not been afforded.
3. Arthritis, skeletal and amputation deformities when not compensated.
4. Cardiovascular Defects — Intractable Stokes-Adams syndrome or angina pectoris, or decompensation with resting dyspnea, malignant hypertension and generalized severe arteriosclerotic disease of an incapacitating nature.
5. Blackouts, intractable seizure states or narcolepsy, agitated depression and intractable psychoneurotic disorders especially hostile, aggressive and paranoid states.
6. Gross and severe obesity.
7. Gross sensory deficits of eye and ear.
8. Intractable alcohol and drug problems.
9. Miscellaneous rare and unusual medical conditions demanding individual analysis, such as severe diabetes and mental difficulties.

Pennsylvania:

1. Loss of both hands or loss of limb or joint mobility. Physicians are urged, however, to evaluate with consideration those who have unusually adapted or adjusted themselves to their deficiencies.
2. Neurologic disorders affecting muscular control and coordination causing spastic or flaccid paralysis to such a degree as to prevent reasonable control of a motor vehicle. Listed for careful consideration are patients with Meniere's syndrome, paralysis agitans, poliomyelitic paralysis, Huntington's chorea, multiple sclerosis, muscular dystrophy, tumors of the brain and spinal cord, cerebellar degenerative disease, post-traumatic syndrome, Friedrick's ataxia and syringomyelia.

3. Vision 20/70 or less in better eye with correction.

4. Dyspnea due to cardiac decompensation.

5. Fixed hypertension 180/100 or above when accompanied by complications.

6. Neuropsychiatric disorders that cause substantial disturbance of attention, intellectual function, perception, reaction time, coordination and personality.

7. Conditions such as epilepsy, narcolepsy and hysteria. The applicant may be considered for license if he has been free of such episodes for at least two years with or without medication.

8. Uncontrolled diabetes. Patients taking insulin without reaction for six months need not be eliminated.

9. Chronic alcoholism.

10. Addiction to narcotics or habit forming drugs.

IV. Permits to Drive

There should be three classes of driving permits issued: One for private vehicles and light trucks with or without medical restrictions; One a graded permit for various types of commercial vehicles which may or may not require medical certification; One for passenger carrying buses for which medical certification should be required every three years.

Medical certification should be required for all applicants 65 years or older and to be repeated at each renewal date. A booklet type of driving permit should be provided so that in addition to medical restrictions, dates of physical certification and previous court convictions, a place should be provided for the American Medical Association emergency medical identification card which is invaluable in emergency care. Those who have health problems must also wear the medical I.D. tag as a necklace, wristlet or anklet which directs attention to the identification card in the wallet.

The reason for graded and different types of permits is largely because of the medical

condition which may be involved. For instance, those with bilateral deafness need not be prohibited from driving a private vehicle or light truck but to drive a commercial vehicle the applicant should have normal hearing either aided or unaided at least in one ear, and to drive a passenger carrying bus he should have hearing within the normal range in both ears and should also be required to wear safety belts with shoulder straps.

Although we estimate that only 2% of all accidents are caused by physical or mental defects, still 2% represents a large number of deaths and injuries, and physical examination for drivers of passenger carrying buses and for those 65 years or older should be required at each renewal date and for certain categories of permits for driving commercial vehicles. Reports from the family physician and the Medical Referral Committee must be depended upon at each renewal date to determine the relationship of physical or mental disorders to driving, for to drive a car is still a privilege and not a right and to drive a school bus is certainly a more responsible undertaking than to drive one's private vehicle.

V. The Drinking Driver

A drinking driver is involved in one-third of all accidents and in from 50 per cent to 55 per cent of those in which a death occurred. Since the average individual suffers impairment of his driving skill with a blood alcohol level of .05 per cent we should make this the critical level for convictions of driving-while-drinking rather than the .15 per cent, a far too generous figure. The average individual under average conditions can take two bottles of beer or two ounces of whiskey and his alcohol blood level will remain under .05 per cent. Four bottles of beer or four ounces of whiskey will produce a blood level of .10 per cent and at this level we all will fail the driver test of skill and judgment. However, although physicians feel that .05 per cent would be the ideal level for conviction of driving-while-drink-

ing, we are willing to accept .10 per cent as the critical level because this figure leaves no element of doubt about one's ability to drive. Of course, the present day figure of .15 per cent, which represents six bottles of beer or three two-ounce drinks of whiskey, is ridiculous and unrealistic. A chemical test of the breath should be mandatory in all cases in which driving-while-drinking is suspected. The breath test is scientifically accurate and would free the innocent as well as help to convict the guilty. It should be administered by a physician or by a properly qualified testing officer who has been trained both in the care of his equipment and in the technique of its use. The alternative to such a law is the implied consent law which has been so widely used in many states. The results of the chemical breath test should be accepted as *prima facie* evidence. If the case goes to a jury, its verdict should be limited to "guilty" or "not guilty" provided mandatory laws have been enacted.

The present laws exonerating a driver of drinking-while-driving with a blood level of .05 per cent or less are proper (.10 per cent alternate). The present laws punishing those with a blood level of .15 per cent or higher are often proper but not enforced. The greatest problem is in the twilight zone of intoxication from .05 per cent to .15 per cent. For this zone a new set of laws should be enacted, mandatory and tough enough to control the average drinker, for this is the range of the social drinker who thinks he is perfectly capable of handling a car in our modern high speed traffic. The results consistently prove him wrong. In answer to the many arguments pro and con in this complex problem the physician is not interested in whether the degree of intoxication was reached on an ascending or descending curve of intoxication. He is not concerned with the type or rapidity of consumption of the alcoholic beverage or whether consumed on a full or fasting stomach. He is not concerned with whether the individual is a beginner or an experienced drinker. He is only concerned with the fact that no one

should operate an automobile in our modern high speed and complex traffic patterns with an alcohol blood level higher than .05 per cent but, in order to get proper laws passed, he is willing to set the figure at .10 per cent. The interpretation of the laws concerning the punishing of these offenders should not be left to the discretion of the judge or consulting physician, for they have both failed miserably in the past. As citizens and physicians, we urge that full-time traffic court judges be appointed with a salary commensurate with the importance of their function. Also, proper and dignified quarters should be provided for this most important court in which the public and the law usually meet for the first time.

We feel that mandatory laws should be provided for each degree of intoxication. Those with an alcohol blood level of .05 per cent (.10 per cent as an alternate figure) should go free of the charge of driving-while-drinking. Those with a blood level of .10 per cent or higher are to be severely punished by revocation of their license, a fine that hurts, and a jail sentence which cannot be suspended even if it is only a few hours. Repeat offenders should be dealt with even more harshly. What these mandatory laws should be must be determined by bar associations and the state legislature.

VI. Speed and Reckless Driving

Since speed and reckless driving cause some 30 per cent or more deaths resulting from crashes, we suggest that more state police be utilized, that the public be educated again to support them and to cease playing "cops and robbers" on the highways, and that proper laws again be enacted and made mandatory. We should endorse and enforce uniform adoption of the speed limits suggested by the National Safety Council. These limits are 60 miles per hour for the day, 55 miles per hour at night, and 35 miles per hour in urban zones, all with a 5-mile per hour tolerance. Dual lane and other modern highways should likewise have a minimum limit of 40 miles per hour. These

limits may seem somewhat low to many but until the manufacturers provide us with safer machines from the standpoint of human engineering, we believe that these limits should be considered the maximum under present conditions. If, and when, the day comes that the manufacturers provide cars employing the many safety suggestions previously offered by the medical profession, then these limits can be raised accordingly.

The laws governing speed and reckless driving should also be mandatory and strict enough to deter those individuals from excessive speed and recklessness, for the public must realize that driving a motor vehicle today is a privilege and not a right. Nor should sympathy be wasted on the so-called hardship case for you may be his next victim. He knows the wages of each offense, whether set by mandatory law or as a result of the point or demerit system, and no deviation can be allowed if the number of deaths and injuries is to be curtailed. The present-day unequal sentences with minimum punishment for serious offenses must cease.

VII. Automotive Design

Since some crashes are unavoidable and others inevitable, it is important that the machine itself be designed, and safety features provided, to protect the occupants. At the present time the destiny of thousands rests in the hands of a comparative handful of men, the designers and engineers who plan next year's cars without benefit of medical advice or consultation. It is also astounding how little money is spent on research for safety features compared to the large sums received from the sale of their products.

The Committee on Trauma of the American College of Surgeons has been concerned with the importance of safety design of the vehicle and the provision of safety features as standard rather than optional equipment. Their efforts have the wholehearted support of all physicians, particularly of the American Medical Association Committee on Med-

ical Aspects of Automobile Injuries and Deaths. Although this Committee is primarily interested in the medical aspects of the problem, its studies and reports of research groups, such as the Cornell Study Group, have convinced the members that design should occupy a high place on the list of objectives. For instance, the three leading sources of injury according to the Cornell figures are: (1) steering assembly, (2) ejection from the vehicle, and (3) impact against the dashboard or windshield. These injuries can occur on impacts of cars traveling at 12 miles per hour which seems to be the critical speed, for at this point the average steering wheel collapses, leaving the steering post as a lethal projection, and no one can protect himself from death or injury. If thrown out of the car, the chances of getting killed or hurt are five times greater than if one had remained inside the protective shell of the vehicle. Of course, safety door latches are important too. The seat belt or, preferably, the shoulder harness is the best safety feature that can be provided at this time and, if worn, will prevent some 60 per cent or more of deaths and injuries. The belt should be anchored to the floor of the car and must meet the safety specifications of the Society of Automotive Engineers. If belts are not provided as standard equipment, provision should at least be made for their attachment and an intensive campaign carried out to educate the public as to their importance in the prevention of death and injury.

Many suggestions have been made which would contribute to passenger safety at little extra cost to the manufacturer. Among these suggestions are: a collapsible steering assembly; Ford's deep-dish steering wheel with a broad steering post covered with protective crash padding; the same type of padding over the dashboard, the back of the front seat, and other dangerous areas in the car; seating the passenger in the front seat farther away from the dashboard; firm anchorage of seats; visual or audible speed signals; and additional small red lights on

the top of the car to flash when speed of 70 miles per hour has been reached. The latter would serve as a warning to the police as well as to other motorists that a car is driving at excessive speeds. It has been suggested that frequent signs and telephones be placed on the highways listing the telephone number of the nearest traffic officer and rescue squad.

In addition to these signals the following devices are recommended: safety door locks, better designed windshields from an optical standpoint, high extensions of the seatbacks to prevent whiplash injury to the neck, a recessed shelf behind the back seat to prevent injury from secondary missiles, less chrome and other reflecting surfaces to eliminate glare especially in night driving, elimination of projecting knobs and buttons and levers, shock absorbers for bumpers or energy absorbing material in the front end and many other features. If the front seats are firmly anchored to the floor and if the backs of these seats will not tip forward, then small accessory seats for children can be made to hook over the top of the seat and secondary belt extensions will go around the waists of the very small youngsters. Older children should be made to ride standing back of the front seat or, if riding in the front seat, in cases of impending crash, they should be instructed to dive to the floor with their backs to the front floor area or back of the front seat wherever they may be. Most of this extra cost could be compensated for by less chrome, the omission of hood ornaments, clocks and radios, and many other accessories as standard equipment.

As I have previously said, one is astounded as to how little has been spent on safety research by the manufacturers compared to the vast sums which have been received from the sale of their products. We are sure that consultation with the medical profession on the aspects of human engineering as related to automotive engineering would soon establish many related facts. These would bear fruit by reducing deaths and injuries at the time of a crash and converting many of the

potentially severe to critical injuries to those of a relatively minor nature. For, in spite of all the slogans, police patrols, vehicle and highway improvements, and the indefatigable work of the many fine local, regional, state and national safety organizations, the traffic toll will continue to rise until these fundamental proposals are adopted. Since a large percentage of state legislators and traffic court judges are members of the legal profession, the active participation and interest of state bar associations must be obtained before any real progress can be made.

The physician is proud of his definitive care of the injured, but his duty as a citizen and a physician will not have been fully discharged until preventive measures have become facts and are reflected in the daily automotive statistics. Fifteen years ago I said that the automobile would soon include

installations necessary for the safety of its passengers and that concerted action would be taken when two million or perhaps three million casualties had been reached. I even published a picture of the Rouse Safety Car illustrating these safety devices.² We now have five million casualties and the Liberty Mutual Survival Car Number 2 and we can't yet answer Cain's query and say "Yes, I am my brother's keeper."

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AMA to Hold Meeting on Pollution

The American Medical Association will hold its first Congress on Environmental Health Problems in Chicago May 1-2, 1964.

Contamination of air, soil, and water, and its effects on health will be discussed by nationally recognized scientists and community leaders. Topics will include air and water pollution, and pesticide and radiological hazards. About 400 persons, mostly practicing physicians, are expected to attend.

"Our purpose is to update physicians on these problems which are complex, but pertinent to the practice of private medicine, and to encourage physicians to provide lead-

ership in community prevention programs," Dr. Millard B. Bethel, director of the AMA Department of Environment Health, said.

"With this conference we hope to launch the first stage of a responsible medical attack on these problems. Our purpose is not only to safeguard, but to promote the maximum health of our expanding population, to treat our environment as an ecological, architectural whole."

The AMA department, activated in July of 1962, is the first national agency to attack the problem of the overall effect of chemicals on man and his environment.

The "Zone of Invisibility" in Community Mental Health

The inauguration of either new or expanded treatment programs requires an assessment of the prevalence of the particular disorder and the specific needs of the individuals considered to be incapacitated. A well recognized problem in assessing prevalence has to do with methods of case finding employed. The problem is made more acute in the area of mental health by the fact that some disorders are less obvious than others. Being more difficult to detect, they are more readily "absorbed" by the community and do not come to light during a routine or cursory inspection. In addition, in the field of community mental health a number of agencies are involved in providing mental health services thereby necessitating an extensive collaborative network for case finding during the particular study period.

As part of a comprehensive analysis of community mental health needs and problems, specific attention was devoted to the following questions: (1) How are individuals with functional non-psychotic psychiatric diagnoses distributed by age? (2) At what age, or ages, do the frequencies show significant upward or downward changes? (3) What are the factors which relate to marked changes in the indicated frequencies?

Method and Procedure

Basic statistics reflecting the prevalence of all categories of mental and emotional illness were gathered through a survey¹ conducted during a typical work week for 38 health and social agencies serving Northern Virginia (City of Alexandria, City of Falls Church, Arlington and Fairfax Counties). Agency personnel completed pre-coded

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schedules on all cases serviced during the week judged to be emotionally or mentally ill according to the standard set of American Psychiatric Association criteria. Reports on the same person from more than one source were combined to eliminate duplications resulting from more than one contact during the survey week.

During the one-week period 1546 persons of both sexes, between the ages of 1 and 103, and of all races were reported as being considered to have a mental or emotional disorder. Cases which met the criterion of having a diagnosis of psychoneurosis, transient situational personality disorder, or personality disorder were selected for this analysis since the intent was to focus upon individuals who by virtue of their functional problem primarily lie in the purview of community agencies. Accordingly, individuals having a diagnosis of psychosis, organic brain damage or mental deficiency were eliminated since the sample of patients in the community with these disorders would most likely be distorted or incomplete due to residence in an institution at the time of the survey of a sizeable number of individuals in these categories.

Out of the total survey sample of 1546 cases, 713 cases met the selection criterion for this analysis. These cases were combined into a single group designated as functional non-psychotic disorders in order to avoid problems inherent in differential diagnosis

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among the participating clinicians especially with regard to children. Also, the data were grouped into rationally derived age categories relating to specific school periods for children and into three major age periods for adults.

Initially the data were analyzed in terms of absolute frequencies and percentages per diagnostic category by age and sex. Before being combined into the rationally derived age groups and the general diagnostic group designated as functional non-psychotic disorders, the data were grouped into three year age intervals to ascertain that distortions were not being introduced and to enable observations to be made for even units of age. Tabulations using the three-year interval revealed the lowest frequencies for the combined disorders as occurring in the 18-20 and 21-23 age groups.

Results and Discussion

Figure 1 presents the distribution of individuals reported as having a functional non-psychotic disorder for the two patient

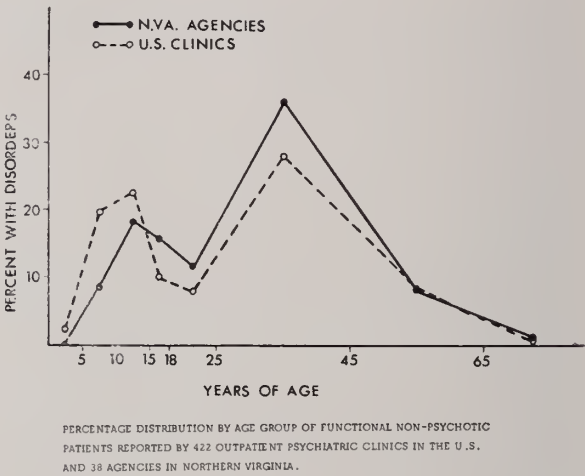


TABLE 1
DISTRIBUTION OF GENERAL POPULATION AND FUNCTIONAL NON-PSYCHOTIC DISORDERS BY AGE GROUPS

Age Groups	NORTHERN VIRGINIA SURVEY			422 U. S. OUT-PATIENT CLINICS		
	General Population ¹	Functional Non-Psychotic Disorders		General Population ¹	Functional Non-Psychotic Disorders	
	%	Number	%	%	Number	%
Total.....		713	100.0		36,830	100.0
1-4.....	12.3	2	0.3	11.3	854	2.3
5-9.....	11.0	61	8.6	10.4	7,225	19.6
10-14.....	9.6	129	18.1	9.4	8,294	22.5
15-17.....	4.2	113	15.8	4.7	3,707	10.1
18-24.....	9.7	88	11.6	8.7	2,953	8.0
25-44.....	32.3	257	36.0	26.2	10,296	28.0
45-64.....	16.7	59	8.3	20.1	3,192	8.7
65+.....	4.2	9	1.3	9.2	309	0.8

¹U. S. Census of Population, 1960. Government Printing Office, Washington 25, D. C.

Norman, Rosen, and Bahn² recently published data which by regrouping into the age groups utilized in the present study could be employed as an "outside reference". Since their data are based on 36,830 cases reported by 422 out-patient psychiatric clinics throughout the United States, it was possible to undertake a sample-"universe" comparison to verify the observations made on our study sample.

samples by age group. The similarity between the percentage distribution of the 713 individuals reported by health and social agencies in Northern Virginia and the distribution of the 36,830 individuals reported by the 422 out-patient psychiatric clinics strongly indicates that a condition of bimodality exists in the age distribution of functional non-psychotic disorders as serviced by the complex of community agencies.

Similar frequency distributions, confirming this bimodality, have been reported recently by Funkhouser and Lantz³ on the basis of data for two individual year periods reported by the twenty-five community clinics in the State of Virginia.

From the data presented in Table 1, the significance of the difference⁴ between the percentage of cases reported in the sample of 422 clinics and the percentage of people in the general United States population for the same age group was computed. The percentages for the 15-17 and 25-44 age groups reported by the clinics are significantly higher than the percentages of individuals in the general population at these age levels. In contrast, the percentage of cases 18-24 years of age reported by clinics is significantly less than the percentage of persons 18-24 in the general population.

For the Northern Virginia study group similar significant differences were found for the 15-17 and 25-44 age groups. The difference between the percentage of individuals in the general population of Northern Virginia and the percentage of individuals with functional non-psychotic disorders in the 18-24 age group was not significant. These, of course, are crude tests of the significance of the difference and subject to criticism; for example, all individuals in the general population are not eligible because of income restrictions for treatment by public agencies. The available census and other data, however, preclude more refined tests of significance.

The marked shift in the clinic population in comparison with the general population from over-representation to under-representation to over-representation lends further credence to the hypothesis regarding the existence of a "zone of invisibility". The low percentage of reported cases in late adolescence and early adulthood suggests that an "absorption" of cases, which escape detection, is taking place in the community framework. This absorption of cases results in an artificially low prevalence and the 18-

24 age period may aptly be referred to as a "zone of invisibility".

The data in Table 1 further indicate that both the Northern Virginia and United States total population show an increase in the size of the 18-24 year group (9.7% and 8.7%) over the 15-17 year group (4.2% and 4.7%). However, the two functional non-psychotic groups in the 18-24 year period decrease in size and are not correspondingly represented in accordance with the larger numbers in the 18-24 age groups in the total population. The fact that the size of the general population increases in the 18-24 age group with the size of the diagnosed population continuing to decrease further supports the concept of a "zone of invisibility". The approximate two-fold increase in the size of the total population in the 18-24 age range as compared with the population in the 15-17 age range would result in an expectation of at least a proportionate increase in the diagnosed population in the 18-24 age range if psychological, social and cultural factors were not major influences.

An alternative interpretation to the constricted size of the two functional non-psychotic groups in the 18-24 age period might be that this is a golden age with respect to mental health. This interpretation, however, does not seem to be warranted when one considers the large number of delinquents in this group, the large number of school drop-outs with emotional problems, and the large number of college students in this age group with emotional problems.

An analysis was done of the institutions attended by 1607 high school graduates to determine whether the low prevalence evidenced in the 18-24 year group was affected by the possibility of mental health services being obtained elsewhere by individuals from Northern Virginia who were undertaking post-high school education, college, technical, business, or trade schools. Fifty-three percent were attending institutions in Virginia or within metropolitan Washington,

D. C. But, only 102 persons of this group were attending institutions which had mental health services as part of their program of student health services. The majority of institutions providing mental health services, however, are limited to providing diagnostic evaluations. Students requiring treatment are referred to their local mental hygiene clinics or private practitioners. The head of one college counseling center recently reported that an analysis indicated that 20% of the student body at his institution for each of the last three years was considered as having an emotional disturbance. However, only 5% of the student body were seeking assistance for their problem or following through with such a referral. Consequently, it does not appear that the low prevalence in the 18-24 age group is artificial since the majority of individuals in Northern Virginia attending post-high school educational institutions would have to obtain needed mental health services from community agencies.

If the concept of a "zone of invisibility" is to be meaningful and useful, it is necessary to explore the various factors involved in generating the "zone of invisibility". First, it appears that the invisibility of persons with mental health problems stems, in part, from the cultural complex of the 18-24 years of age group. Generally speaking, family members and social institutions in the community, such as schools, serve with a high degree of success in detecting mental health problems in children and young teenagers. However, when youth leaves school through graduation or drop-out, the role of the school is drastically curtailed. Also, at this time the role of the family is being diminished as a consequence of the struggle for emancipation which follows the attainment of full pubescence. Thus, roughly at the age of 18 the culmination of the process of altering the "usual" contacts with home and school to meet the cultural pattern of growing independence has occurred. This is the period when the folkways and mores of the sub-culture of young adults emerge

as the major influential agents in the social environment and tend to set youth apart from the general society.

Another factor contributing to this invisibility is that while in school the individual generally is a passive recipient of various services inasmuch as attention is focused on him in a case finding manner. Upon leaving school, there is an abrupt transition and the individual has to actively seek out services that he needs. However, the establishment of independence in early adulthood often militates against seeking assistance for fear that such an action will be indicative of continued dependence rather than the fiercely sought independence.

The existence of this "zone of invisibility" has important implications in the programming of the preventative community mental health effort. First, methods have to be developed for appraising youth during their secondary school years of the complex of health and social agencies from whom assistance is available. Second, teen-agers have to be assisted in working through that seeking assistance is not a sign of dependence or failure but rather a sign of growth and maturity. Third, methods have to be developed, possibly by school guidance and psychological service personnel, for follow-up in the immediate post-high school years of individuals known to have mental health problems in high school. The importance of each of these points is attested to by the group of individuals Conant⁵ has so aptly termed as "social dynamite".

A second major implication of this invisibility stems from the marked increase in the percent of individuals obtaining services after the age of 25 and usually after marriage. If we consider that this is the early formative period for the children of these patients and the fact that functional or emotional disorders have their roots in early childhood, efforts at reducing the zone of invisibility and the introduction of preventive treatment prior to parenthood become of prime importance. Otherwise, we can wonder whether we simply are facilitating

the development through psycho-social transmission of another generation having an appreciably high prevalence of emotional disorders.

Finally, these data point to the need for the longitudinal study of individuals whose contact with mental health agencies began in childhood.

Summary and Conclusions

This study suggests the existence of a "zone of invisibility" in community mental health practice with regard to individuals in the 18-24 age range. Socio-cultural factors appear to be major variables inasmuch as the "zone of invisibility" corresponds to the period in the life cycle when young adults have reached full pubescence, have completed high school, and are, therefore, relatively independent of the more intimate observations of the home and school. This is a period when the folkways and mores of the sub-culture of young adults emerge as influential agents in the social environment and tend to set youth somewhat apart from the general society of people.

Community mental health programming requires the combined effort and close liaison between mental hygiene clinics and the health and social agencies which function in the broader framework of community services. The interaction of all possible referral sources is needed to flag and reach persons between the ages of 18 and 25 in order to achieve minimal elusiveness. Neglecting the development of methods for reaching this important age group will only result in the persistence of the "zone of invisibility" and an incompleteness in the

preventative dimension of community mental health programs.

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1. The authors thank the directors and staffs of the mental health, public health, welfare, and social agencies in Northern Virginia and Washington, D. C. for their assistance in making possible the survey on which this study is based. These include: Alexandria Hospital Emergency Room, Alexandria Association for Retarded Children, Alexandria Catholic Charities, Alexandria Community Health Center, Alexandria Department of Public Health, Alexandria Department of Public Welfare, Alexandria Family Service, Alexandria Federal District Court, Alexandria Juvenile and Domestic Relations Court, Alexandria Mental Hygiene Clinic, Alexandria Red Cross, Alexandria Visiting Nurse Service, Alexandria School Department-Visiting Teachers, Arlington Department of Public Health, Arlington Hospital, Arlington Juvenile and Domestic Relations Court, Arlington Mental Hygiene Clinic, Arlington Public School-Psychology Service, Arlington Visiting Nurse Service, Arlington School Department-Visiting Teachers, Fairfax Child Guidance Clinic, Fairfax Department of Public Health, Fairfax Department of Public Welfare, Fairfax Hospital, Fairfax Juvenile and Domestic Relations Court, Fairfax Public School-Psychology Department, Fairfax Visiting Nurse Service, Fairfax County School Department-Visiting Teachers, Catholic Charities of Northern Virginia, 15 participating Clergymen, Division of Alcoholic Studies and Rehabilitation, Family Service of Northern Virginia, Virginia Parole and Probation Department, Virginia Vocational and Rehabilitation Service, D. C. General Hospital, Jewish Social Service, Travelers Aid, Veterans Administration Hygiene Clinic, Northern Virginia Mental Health Association, Alexandria Mental Health Association, Alexandria Health and Welfare Council, Arlington County Health and Welfare Council and Fairfax County Health and Welfare Council.
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Agar-Gel Electrophoresis in the Clinical Laboratory

Since 1937, when Tiselius demonstrated that proteins could be classified according to their electrophoretic mobility, the technique of electrophoresis has been utilized to analyze a great variety of materials. The basic technique has been considerably modified and adapted to fulfill particular conditions of clinical and experimental analysis. The major variations consist of alterations of media to support the test sample, of buffer solution and of electrical conditions. Prototypes of the major varieties of techniques include the original Tiselius moving boundary apparatus which requires no supporting medium, paper electrophoresis employing filter paper strips as a fixed supporting medium and agar-gel electrophoresis wherein migration is performed within a gel medium. The method most generally utilized in the clinical laboratory at present is paper electrophoresis. This technique is extremely practical and provides convenient quantitation by elution and spectrophotometric measurement of bound dye.

The agar-gel technique is a more recent innovation and presents several advantages over the paper strip method. The degree of technical difficulty of the two methods is comparable. The basic dissimilarity is that the gel method employs a thin layer of solidified agar placed upon an ordinary microscope slide as the supporting medium. A very small sample is placed in a fine slit in the agar perpendicular to the long axis of the slide. The electrophoresis is carried out in this medium for a period of 20 minutes, the preparation is fixed briefly and the agar is dried to a thin clear film. The slide is then readily stained and the clear pattern of the various separated protein fractions is visible as a series of bands upon the clear background of the unstained agar. The slide may then be utilized for spectrophotometric

scanning and quantitation and permanently preserved. The method is admirably suited for purposes of demonstration of protein abnormalities since the original slide is easily mounted and used as a lantern slide for projection. Under ordinary conditions, 7-14 separate serum protein fractions may be isolated. Relatively accurate evaluation of the patterns may be made simply by inspection.

Agar-gel readily lends itself to use in the clinical laboratory since a variety of specimens may be examined with the same apparatus, including serum, urine, cerebrospinal fluid, hemoglobin, exudates and transudates. Specimens of small volume and low protein concentration, such as cerebrospinal fluid may be analyzed without difficulty by this method. Since a minimal protein concentration of 100 to 200 mgm% is required to produce a satisfactory pattern by any method it is frequently necessary to reduce the volume of the specimen by dialysis or ultrafiltration in order to concentrate the sample. This often would leave insufficient volume of sample for paper electrophoretic analysis. However, the agar method requires only 2-3 microliters of material, hence its suitability for examining clinical specimens such as spinal fluids.

Agar may be used to examine hemoglobin solutions and renders a rapid analysis and clear separation. Using special buffer it is possible to separate A₁ from A₂ hemoglobin. Otherwise, this frequently desired diagnostic aid can only be performed with the more exacting starch-gel electrophoresis procedure.

Another area in which agar-gel has proven to be a superior medium is in the technique of immunoelectrophoresis. This procedure utilizes the principles of agar electrophoresis and immune diffusion and precipitation in agar thus allowing precise immunochemical analysis of protein solutions.

In summary agar-gel electrophoresis may be a valuable technique in the clinical lab-

oratory due to its variety of applications, convenience of requiring minute samples and rapid migration time, ready utilization as a visual aid in demonstrations and excellence as a medium in a number of special

procedures such as immunoelectrophoresis.

R. F. CLARK, M.D.

*Dixie Hospital
Hampton, Virginia*

Rheumatic Fever Needs Better Program

A study of rheumatic heart disease among military recruits revealed that few victims were aware of their condition and even fewer were receiving treatment, according to Dr. Basil M. RuDusky, Philadelphia.

Of 20,597 men and women between the ages of 17 and 26 examined in 1961 and 1962, 182 were found to have rheumatic heart disease, Dr. RuDusky wrote in the September 28 *Journal of the American Medical Association*.

A point of "strong consternation" is the finding that of these 182, only 21, or 12 per cent, were aware of the presence of heart damage and only 13, or 7 per cent, were undergoing drug therapy. "Therefore, one must woefully expect that within 10 years the incidence of recurrences of rheumatic fever in the group studied will most assuredly increase because of the obvious lack of an adequate program of prophylaxis [prevention]."

Penicillin and other antibiotics are often used to treat a sore throat or undiagnosed fever because rheumatic fever commonly occurs after streptococcal throat infections. However, this seems to be done primarily among children.

"It has been my experience that very few adults will bother to visit their physicians for a 'cold' or sore throat unless they are acutely ill or are in need of a visit for one of many other reasons," he said.

In an accompanying *Journal Editorial*, Dr. Thomas W. Mattingly, Washington, D.C., said the continuing draft provides an excel-

lent opportunity for screening heart disease among male youths. At the present time, 5 to 10 per cent of the men who register for the draft are found to have heart murmurs or other heart and circulatory disorders during these screening examinations.

"It is unfortunate that there has been no provision for detailed evaluation and definitive cardiovascular diagnosis. Nor has there been any plan for clearing each youth rejected because of cardiovascular diagnosis during these superficial examinations, or when separated from military service because of such lesions which were not recognized at the time of entrance examination. Without careful and thorough evaluation, simple rejection by local draft board examination should neither exclude a youth from military service nor label him a cardiac cripple."

Dr. RuDusky compared his statistics on heart murmurs in military personnel in 1961-62 with similar statistics obtained from men of military age in 1941-43. The comparison revealed a 63 per cent decrease in the incidence of rheumatic heart disease. However, when improvements in diagnostic techniques between the time of the two studies were allowed for, the decrease should probably be adjusted to about 40 per cent. He attributed the reduction primarily to the use of antibiotics and other drugs in the prevention and treatment of the disease.

Dr. RuDusky is affiliated with the department of internal medicine, Temple University Medical Center.

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Vital Records and Health Statistics in Virginia

Although a law was enacted in 1853 by the General Assembly providing for the collection of birth and death records by the assessor or commissioner of revenue when taxes were assessed, it was not until 1912 that the Bureau of Vital Statistics was established. On June fourteenth of that year it became the responsibility of attending physicians to prepare birth and stillbirth certificates and to certify to the cause of death on death certificates. In 1918 a central State registry for marriage and divorce records was established in the Bureau. At the same time, copies of marriage registers for the years 1853 through 1917 and birth and death records collected by the commissioners of revenue between 1853 and 1896 were transferred to the Bureau. Until this time, these records had been filed in the Office of the Auditor of Public Accounts.

New vital statistics statutes for Virginia were enacted by the General Assembly in 1960 which provided that the local medical health director in each county and city be the local registrar of vital statistics. This new legislation enabled vital statistics to become a more useful part of the public health program in the State. Prior to 1960 the local registrars were appointed by the State Registrar of Vital Statistics and they were usually not in the health department. Under the present registration procedures, all records of birth, death, and fetal death are filed with the local health departments by the hospitals, physicians, and funeral directors, thus enabling the health director immediately, to better understand the health picture of his community. In turn, the local health departments forward the original copies of these vital records to the Bureau

of Vital Records and Health Statistics of the State Health Department.

Today all records are microfilmed soon after being received in the Bureau, a copy of the film is stored as a security copy in case the original certificate should be destroyed, and a copy is sent to the National Vital Statistics Division of the U. S. Public Health Service to be used in compiling statistics at the national level.

A major change provided by the new statutes requires the reporting of all fetal deaths regardless of the duration of pregnancy. Formerly, only those fetal deaths of twenty weeks or more gestation were required to be reported. The Bureau is presently recording approximately four times as many fetal deaths as before, thus it appears that about three-fourths of fetal wastage occurs prior to twenty weeks of gestation.

In the early years of registration, it was difficult to foresee the value of a birth certificate. Today's physician, though busier than ever, realizes the importance of this record, for it is truly the child's deed to American citizenship. This document is increasingly being required on many occasions during an individual's lifetime: for school entrance, employment, marriage, military service, social security, inheritance, passport application, and other government benefits.

The value of the statistical data derived from vital records has grown in proportion to the many individual needs for this information. To handle this increased workload over the years, efforts have continually been made by the Bureau to stay abreast of the changing requirements. As funds became available, more modern equipment was obtained. With the advent of data processing equipment, detail breakdowns became avail-

able which were previously impossible to achieve by hand counts.

A beginning toward a central statistical and analysis service for the entire State Health Department was made in April, 1961, when statistical activities of the Department were coordinated and transferred to the Bureau of Vital Statistics, which then became the Bureau of Vital Records and Health Statistics. When new facilities for housing the total unit are available, it is hoped that electronic data computing equipment will be added to handle the proposed enlargement of the scope of public health statistics in Virginia.

At this time it is realized there is a need for more detailed information on such subjects as congenital malformations or anomalies. In the near future, the Bureau will attempt to get better reporting on the birth certificate of any congenital defect. In this endeavor the Bureau requests the cooperation and interest of the physicians and hospitals. In connection with this—and all data entered on birth and death records—it should be emphasized that the Bureau treats such records as an extension of the physician—patient relationship. The actual facts

of each case should be properly recorded because access to such information is carefully controlled by law.

While registration and the issuance of certified copies of vital records will always be of major importance, in the future increased emphasis in the Bureau will be directed toward statistical analysis of health activities. Already, a number of special, monthly, and annual reports dealing with vital and health statistics are available. For a number of private organizations engaged in health research and education, especially accident prevention, tuberculosis, polio and the aging, the Bureau makes routine monthly and special yearly tabulations. An increasing number of physicians, sociologists, students, and business concerns is turning to the Bureau for information to aid in their individual research and study; and, of course, vital statistics continue to be a tool for measuring problems and accomplishments in the public health of our State.

Thanks to the physicians and hospitals of Virginia, registration today has reached a high level of completeness thus enabling statistical data to be more readily available for use by the medical profession.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE
DISEASE CONTROL

	Oct. 1963	Oct. 1962	Jan.- Oct. 1963	Jan.- Oct. 1962
Brucellosis	2	1	9	11
Diphtheria	0	0	0	11
Hepatitis	53	50	730	1033
Measles	110	43	8156	9302
Meningococcal Infections	8	7	79	60
Aseptic Meningitis	2	3	27	42
Poliomyelitis	11	1	18	8
Rabies (In Animals)	27	5	178	122
Rocky Mt. Spotted Fever	2	1	36	45
Streptococcal Infections	553	369	7710	6047
Tularemia	0	0	7	13
Typhoid Fever	0	0	8	14

Woman's Auxiliary

President-----MRS. JAMES M. MOSS, Alexandria
President-Elect-----MRS. W. NASH THOMPSON, Stuart
First Vice-President---MRS. WALTER A. ESKRIDGE, Parksley
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Directors

MRS. A. B. GRAVATT, JR., Kilmarnock
MRS. F. CLYDE BEDSAUL, Floyd
MRS. W. F. GRIGG, JR., Richmond

New President.



Mrs. James M. Moss was born in Charlottesville, of native-Virginian parents. Her father, Mr. Audrey W. Bybee, died in 1955 but her mother, Mrs. Henry V. Peterson, is still residing in Charlottesville.

Dr. and Mrs. Moss were married in 1941 and have three sons: James, a sophomore at Emory and Henry College; William, a junior at St. Stephen's Episcopal School for Boys in Alexandria and Robert, a freshman at George Washington High School, also in Alexandria. They have lived in Alexandria since 1949 and moved into their present home in 1953. Since that time they have become known for their generosity in lending it for innu-

merable meetings and social gatherings for adults and the "younger set" alike.

Mrs. Moss is a graduate of the University of Virginia School of Nursing. While she did not continue nursing beyond the first year of her marriage, she has remained a strong supporter of her profession.

Mrs. Moss was president of the Woman's Auxiliary to The Medical Society of Alexandria in 1961-62 and chairman for the State convention in Washington, D. C., in 1962, State treasurer of the Woman's Auxiliary to The Medical Society of Virginia from 1959-61, State Public Relations chairman in 1954-55, State chairman of the Committee on Research and Romance of Medicine in 1956-57, State chairman of the American Medical Education Foundation in 1957-58, councilor from Virginia to the Southern Medical Association in 1959-61, and a delegate to the Woman's Auxiliary to The American Medical Association for the past five years.

Mrs. Moss participated in the Diabetes Detection Drive annually until it was discontinued as a local medical society project. She has served on the Annual Clinical Assembly committee since 1956, a medical education program sponsored by the Alexandria, Arlington and Fairfax Medical Societies. She has been a member of the Ladies Board of the Georgetown University Hospital since 1954.

Mrs. Moss attends the Westminster Presbyterian Church, is treasurer of the Beverly Hills Women's Club, a member of the Mansion Drive Club and has taken an active interest in politics and volunteer services in the community.

Foremost, however, has been her interest in her sons' activities through the years. This has been expressed through active work in the Parent-Teacher Associations, Sunday School classes, Cub Scouts and as a co-founder and former officer of the Fairlington Junior Rifle Club. In addition, she has

joined with her boys in such activities as speed-reading, swimming and water-skiing lessons.

Rachel Moss' favorite hobby is sewing, though she has had time for the last few years for only mending and other necessary sewing. She loves to cook and her talent runs to the hearty dishes that men seem to prefer.

M.L.P.

President's Address

It is an honor and a privilege to stand before you as your new president.

Today, we need to carefully and thoughtfully examine the objectives of the Woman's Auxiliary to The Medical Society of Virginia. These objectives as stated in our by-laws are:

a. to extend the aims of the medical profession to all organizations which look to the advancement of health and health education.

b. to cultivate friendly relations and promote mutual understanding among physicians' families.

c. to participate in any endeavor on the request of The Medical Society of Virginia.

d. to coordinate and advise concerning the activities of the component auxiliaries.

In all of our activities we are guided and advised by both The Medical Society of Virginia and by the Woman's Auxiliary to the American Medical Association.

Our Auxiliary was organized in October 1922 at the Monticello Hotel in Norfolk, by Dr. and Mrs. Southgate Leigh of Norfolk and Mrs. Allison Hodges of Richmond. Mrs. Lloyd Williams of Norfolk became the first president. The three vice-presidents were from Richmond, Roanoke, and Farmville, respectively.

Four months earlier the Woman's Auxiliary to the American Medical Association had organized with Mrs. S. C. Red serving as chairman. Twenty-four ladies from eleven states were present. At the first annual meeting on June 28, 1923, sixty ladies from seventeen states were registered. Dr. South-

gate Leigh of Norfolk was one of three physician speakers who "inspire us with the thought that we are laying the foundation for a far reaching movement."

During these years the American Medical Association was hard at work to improve medical education, medical practice acts and hospital standards, and to eliminate medical "diploma mills". Banting and Best discovered insulin, Landersteiner discovered blood types. A million volt x-ray tube was used to treat cancer. The first talking picture appeared. Lindbergh made a solo flight across the ocean. The Nineteenth Amendment had give women the right to vote in 1920.

Today we are finding that we not only have the right to vote but that we have a moral obligation to use that vote. We must try to be informed and we must use that information to make others aware of the fact that we must work for, vote for, and lend our support to well-qualified candidates for every office whether at local, state, or national level.

Medicine's story, which is a good one, must be told. We must work with all of the peoples of our communities and with each other to promote an understanding of the aims and objectives. If we tell the story factually, sincerely, and often enough, our physicians will have the public support necessary to practice medicine in a society where free enterprise still exists.

However, we must not restrict ourselves only to those things that affect the medical group. We must be equally concerned with all of the problems that beset our communities. Dr. George M. Fister, a past-president of the American Medical Association has said, "our fight against federal dictation is not merely one of concern only to physicians and their freedom to practice the best medicine possible, but it also concerns, equally, or more so, the individual citizen, all professions, and the private enterprise system in this country."

I would also like to direct your support to the American Medical Association Education Research Foundation (AMA-ERF).

This foundation is dedicated to raising funds to assist the medical schools in this country. The newest baby or branch of the foundation is the loan guarantee program which, in its first year, advanced more than ten million dollars in credit to approximately five thousand medical students, internes, and residents in need of financial assistance. One out of every ten medical students is a borrower.

In closing, I urge each of you as individuals to join VaMPAC, your state medical political action committee. Contribute to VaMPAC so that medicine's political efforts have identification.

Let each of us be an active participant in that "far reaching movement" which was started in Norfolk in 1922.

Mrs. James M. Moss, *President*

ADVISORY COUNCIL

Fletcher J. Wright, Jr., M.D. Petersburg
 Walter A. Porter, M.D. Hillsville
 James M. Moss, M.D. Alexandria

COMMITTEE CHAIRMEN

A.M.A.-E.R.F. Mrs. Malcolm H. Harris, West Point
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The Medical Society of Virginia

Minutes of Council

A meeting of the Council of The Medical Society of Virginia was called to order by Dr. Fletcher J. Wright, Jr., President, at 9:30 A.M. on Sunday, October 6, 1963, at Hotel Roanoke. Attending were: Dr. Richard E. Palmer, Dr. Russell Buxton, Dr. James M. Moss, Dr. Harry J. Warthen, Dr. Mack I. Shanholtz, Dr. Paul Hogg, Dr. K. K. Wallace, Dr. Thomas W. Murrell, Jr., Dr. A. Tyree Finch, Dr. W. N. Thompson, Dr. Alexander McCausland, Dr. Dennis P. McCarty, Dr. James G. Willis, Dr. C. C. Hatfield and Dr. Michael A. Puzak. Also attending were: Dr. Snowden C. Hall, Jr., 2nd Vice-President; Dr. Thomas S. Edwards, 3rd Vice-President; Dr. W. Callier Salley, Vice-Speaker of the House; Drs. Vincent W. Archer, W. Linwood Ball and Allen Barker, delegates to the American Medical Association; Dr. Hiram Davis, Commissioner, Department of Mental Hygiene and Hospitals; and Dr. Russell M. Cox, Secretary-Treasurer, State Board of Medical Examiners.

Special guests included Mrs. A. B. Gravett, Jr., President, Woman's Auxiliary to The Medical Society of Virginia; Mrs. James M. Moss, President-Elect, Woman's Auxiliary to The Medical Society of Virginia; Dr. James D. Hagood, Past-President and Chairman of Legislative Committee; Mr. Arne Larson, Assistant Director, AMA Department of Medicine and Religion; and Mr. Richard M. Nelson, Field Representative of AMA.

Dr. Wright introduced Mr. Larson who reported that great strides have been taken in recent years toward bringing clergymen and physicians closer together. He stated that interest in the relationship of medicine and religion is especially strong among the various faiths. Many current religious publications are devoting a considerable amount of space to this relationship. It was learned that 90% of the population is reached by ministers and physicians together, and this fact illustrates the need of a close working relationship between the two groups.

The American Medical Association first became interested in this relationship in 1958 and took definite action in 1961 by organizing its Department of Medicine and Religion. Already, 36 state medical societies have approved the Department and 26 have established their own state programs. Matters covered were reported to range from hospital procedures for clergymen to maintenance of life through extraordinary

and ordinary means. At the present time, there are 148 pastoral clinical schools which offer courses which range from two weeks to two years.

A motion was offered by Dr. Hatfield calling for the appointment of a Special Committee on Medicine and Religion. The motion was seconded and adopted.

Dr. Hogg then presented the report of the Finance Committee which included the proposed budget for fiscal 1963-64. He pointed out that the financial condition of the Society is much better this year than last—a direct result of the increase in dues. The excess of operating income over operating expenses was attributed to several factors—including an unexpected lull in the King-Anderson battle.

There was considerable discussion concerning desirable methods of making scholarships available to our two medical schools, and it was decided that the matter should be left pretty much to the Deans concerned.

A motion to approve the budget as reported by the Finance Committee was seconded and carried. The completed budget is reported in the minutes of the second session of the House of Delegates.

Dr. Murrell acquainted Council with a series of television programs proposed by WRVA-TV of Richmond. The programs, offered at no cost to the Society, would be for five minutes a day—five days per week—for thirteen consecutive weeks. It was reported that there is a strong prospect that the series could be extended indefinitely. The programs would be of the "health talk" variety and would cover an endless variety of medical subjects. The proposed time of 1:55 P.M. to 2:00 P.M. was considered good. Dr. Murrell stated that close supervision and censorship would be exercised, and that, in his opinion, a great deal of good would be obtained.

It was then moved by Dr. Murrell that the offer of WRVA-TV be accepted. The motion was seconded and adopted.

Council then gave its attention to a suggested format for the 1967 Annual Meeting as devised by Dr. Moss. The format is considerably different from that currently used in that it features scientific sessions arranged by the various specialty groups. Dr. Moss had just returned from the annual meeting of the Kentucky State Medical Association and reported that this type format had proved extremely popular in that State. Attendance was reported to have increased considerably. Reaction to Dr. Moss' sugges-

tions was quite favorable and the Secretary was directed to write each specialty group and seek to obtain their thoughts on the proposal.

A resolution by Dr. Hatfield having to do with laws and regulations pertaining to the development, testing and marketing of new drugs was then considered. Dr. Hatfield had been requested by Council to compose a resolution following similar action by the Virginia Academy of General Practice.

After careful consideration, it was moved that the second paragraph be amended by eliminating the words "one of", making it clear that the drug industry and the medical profession had, by working together, attained the highest standards of therapeutic excellence in the world. The motion was seconded and adopted. The resolution was then adopted as amended. The complete resolution is included in the minutes of the second session of the House of Delegates.

Dr. Cox acquainted Council with several matters which may require legislative action. He reported that the American Medical Association, through the National Federation of State Boards, had requested that states clear the way for the use of Canadian and Mexican physicians during periods of extreme emergency. The request will receive further study by joint legislative committees. Dr. Cox went on to describe the difficult problem faced by our medical schools in obtaining distinguished foreign physicians for teaching purposes. He stated that the Society's Committee on Medical Education had recommended action to relieve the situation, and that it would be considered by the House of Delegates.

The problem of the clinical psychologists was then discussed at some length, and Dr. Cox reviewed the events which had led to a request that clinical psychologists be brought under the supervision of the Board of Medical Examiners. It was learned that in 1962, clinical psychologists sponsored legislation designed to completely divorce themselves from medical supervision. Practically no control is possible at the present time, and certification is the responsibility of the Department of Mental Hygiene and Hospitals.

Following meetings with the Society's Committee on Mental Health and representatives of the Virginia Neuropsychiatric Society, a subcommittee representing these groups met to consider possible action. A meeting was also held with a legislative committee representing the clinical psychologists, at which time the latter group rejected any thought of being placed under the State Board of Medical Examiners. Brought out was the fact that the psychologists will undoubtedly again sponsor legislation in the 1964 Gen-

eral Assembly for the purpose of accomplishing the 1962 objectives.

A resolution which would have the Society oppose any change in the Virginia law completely removing clinical psychologists from medical supervision was read, and a motion made by Dr. Wallace for adoption. When the thought was expressed that the resolution should be introduced in the House by an individual, the motion was withdrawn. Dr. Murrell agreed to introduce an appropriate resolution on the House floor.

Council then considered a letter urging it to seek an amendment to the Constitution and By-Laws providing full Council membership for the Commissioner of Mental Hygiene and Hospitals. It was mentioned that even should Council agree, such amendments could not be accomplished during this Annual Meeting. Dr. Wright reported that the Executive Committee had considered a similar proposal in the recent past, and agreed that the closest possible liaison should be maintained with the Commissioner. However, there had been some reluctance to further increase the number of non-elective Council members. It was reported that other Southeastern states had been contacted and that only North Carolina included either the Commissioner of Health or Commissioner of Mental Hygiene and Hospitals on its Council. In that particular case, the Commissioner of Health was an *ex officio* member of Council without vote.

Following considerable discussion as to the advisability of further enlarging Council, a motion was introduced which would reject further additions. It was then pointed out that the Commissioner will be invited to all Council meetings and his advice and guidance sought.

A substitute motion was introduced and seconded requesting that the matter be tabled for the time being. The motion carried.

Dr. Warthen indicated that he did not feel that his effectiveness as a member of Council would be diminished by not having a vote, and Dr. Shanholtz stated that he shared this same view as to his own personal participation. Dr. Archer suggested that thought be given to inviting the Deans of both medical schools to future sessions of Council.

Council reviewed Society participation in the Southeastern States' Hospitality Suite at AMA sessions. It was the consensus that such participation is desirable, but that once each year should be sufficient. *It was then moved and seconded that The Medical Society of Virginia participate as a sponsor of the suite only during the annual session of AMA. The motion carried.*

While considering a request that approval be given a Maternal Health Committee interpretation of that portion of the State Maternity Hospital law pertaining to blood availability in hospitals, Council heard that deaths from hemorrhage have been mounting. Although it was agreed that the committee intent was good, there was some question as to whether the interpretation would place undue hardships on some hospitals. A question was also raised concerning the time factor with respect to cross matching.

A motion was then made and seconded that the committee's interpretation be challenged and that it be requested to give further and continuing study to the problem. The motion also thanked the committee for its efforts in this regard. The motion carried.

Dr. Shanholtz stated that additional general medical clinics, modeled after the well-known Russell County project, were needed in Virginia. He went on to review the report of a VALC Committee which had led to the project, and referred to a previous action by the Society's House of Delegates in endorsing such clinics as long as they had the approval of the appropriate local medical societies. He indicated that no new legislation was needed to make additional clinics possible.

Consideration was given a request that Council give its approval to a new automotive crash injury project soon to be conducted in Virginia by Cornell University. The project, involving late model vehicles, is quite similar to projects which have been carried on during the past six or seven years.

A motion of approval was seconded and adopted.

Next on the agenda was a request that the Society endorse the proposed purchase and operation of U.M.W.A. Hospitals by the United Presbyterian Church. It was brought out that state medical societies in the areas concerned were being approached in this regard, and that several had some reservations. It was learned that five of the ten hospitals had only recently been purchased through funds made available by the Area Redevelopment Administration. The other five are scheduled for purchase in 1964. The feeling existed that not enough was known about the proposed operation of the hospitals, and details surrounding the purchase, to put the Society on record at this time. *Consequently, a motion was adopted rejecting endorsement at this time of the purchase and operation of the hospitals by the United Presbyterian Church.*

Dr. Salley, as a matter of information, brought Council up to date on efforts by podiatrists to obtain

coverage under contracts of the Virginia Medical Service Association (Richmond Blue Shield). Since it appears that this group is determined to pursue its objective, even to the extent of possibly sponsoring legislation, he felt that Council would want to give the matter every consideration. It was suggested that Mr. William King, President of Virginia Medical Service Association, should be invited to attend the next meeting of Council and state his views on the subject. It was agreed that this would be done.

Council was advised that a considerable number of grievances continue to be received in the State Office, and, in line with established procedure, are forwarded to mediation committees of the local societies concerned. Since a question had been raised on at least one occasion concerning this procedure, Council was requested to confirm it as a matter of policy. *A motion was then made and seconded that the procedure of referring grievances to the mediation committees of the local medical societies concerned be approved. The motion carried.*

Council was then told that some areas of the State need educational facilities for mentally retarded children. *It was moved that local superintendents of education be urged to provide such facilities when and wherever possible. The motion was seconded and adopted.*

There being no further business, the meeting was adjourned.

Minutes of House of Delegates

FIRST SESSION

The House of Delegates of The Medical Society of Virginia met in the Ballroom of Hotel Roanoke, on Sunday, October 6, 1963, and was called to order at 2:00 P.M. by Dr. Fletcher J. Wright, Jr., President.

Dr. Wright introduced Dr. W. Callier Salley, Vice-Speaker, who requested a report from Dr. James P. Charlton, Chairman of the Credentials Committee. Dr. Charlton reported a quorum present.

The minutes of the October, 1962, meetings of the House were approved as published in the December, 1962, issue of the Virginia Medical Monthly.

The Speaker then introduced Mrs. A. B. Gravatt, Jr., President of the Woman's Auxiliary to The Medical Society of Virginia. Mrs. Gravatt reported that the Auxiliary's 41st year had been a most active one. She reported an increase in membership and stressed the splendid support being given VaMPAC and AMA-ERF. Also recognized was Mrs. James M. Moss, President-Elect of the Auxiliary.



Top—Dr. Edward R. Annis, President of the American Medical Association; Dr. Richard E. Palmer, President of The Medical Society of Virginia; and Dr. Fletcher J. Wright, retiring President of The Medical Society of Virginia. Left—Dr. John Wyatt Davis, Jr., Lynchburg, accepts The Robins Award, the first to be presented to a Virginia physician. He was recognized for his work with the graduating classes of the medical schools of the University of Virginia and the Medical College of Virginia, and for his work in the field of public relations and for his role as a member of the Medical Advisory Board of the U. S. Junior Chamber of Commerce. Right—The Robins Award which is presented by the A. H. Robins Company, Richmond.



Prize Winning Scientific Exhibits at Annual Meeting.

1st Award—Retinal Burns by Walter J. Geeraets, M.D., William T. Ham, Jr., Ph.D., and DuPont Guerrey, III, M.D., Richmond.

2nd Award—Day Care Treatment of the Emotionally Disturbed Child and Adolescent by William M. Lordi, M.D., Richmond.

3rd Award—Salvage of Extremities by Vein Grafts—John A. Mannick, M.D., and David M. Hume, M.D., Richmond.

Dr. Salley next introduced delegates from allied organizations. Dr. Moffett Bowman, Roanoke, represented the Virginia State Dental Association; Mr. Wallace S. Klein, Salem, represented the Virginia Pharmaceutical Association; and Mr. William H. Flanagan, Roanoke, represented the Virginia Hospital Association. Mr. Klein spoke briefly to the House concerning a proposed Association of Professions and read a resolution adopted by the Virginia Pharmaceutical Association advocating such an organization.

The House then heard Dr. William Sandusky, representing the University of Virginia School of Medicine, discuss problems and policies having to do with admissions. He stressed the fact that medical schools are always concerned about the number and quality of their students. It was learned that the number of applicants has increased during the last three years—reaching the 700 mark last year. In 1960 only 500 applications were received by the University. The fall-off in applications, as well as the recent increase, can be attributed to many factors—ranging from the depression years to the much discussed population explosion.

Dr. Sandusky reported that 66% of the freshman class at the University of Virginia School of Medicine is composed of Virginia students. It was also learned that approximately 66% of all Virginians presently in medical schools are attending either the University of Virginia or the Medical College of Virginia.

Dr. Miles Hench, Assistant Dean at the Medical College of Virginia, discussed the selection of students, and explained that ability, motivation and personality are among the important factors which must be considered.

The Health Careers Program of the Virginia Council on Health and Medical Care was described by Dr. Shelton Horsley, III. Dr. Horsley stressed the role played by The Medical Society of Virginia and acquainted the House with the new procedure to be followed in answering inquiries from interested students. In those instances where special material is sent the student, the family physician will also be contacted and provided the same information. This will permit the family physician, should he so desire, to contact the student and discuss with him the rewards of a medical career.

Dr. Wright then delivered his Presidential address, which will be published verbatim in the December issue of the Virginia Medical Monthly.

Dr. Salley appointed temporary chairmen from the Congressional Districts to meet with their respective delegations for the purpose of electing members of the Nominating Committee.

Following an intermission, during which the various delegations caucussed, the Committee on Nominations was announced as follows:

First District	.....Dr. Walter Eskridge
Second District	.....Dr. Mallory S. Andrews
Third District	.....Dr. Campbell Manson
Fourth District	.....Dr. William Grossmann
Fifth District	.....Dr. Francis McGovern
Sixth District	.....Dr. George Hurt
Seventh District	.....Dr. Charles Savage
Eighth District	.....Dr. Guy Hollifield
Ninth District	.....Dr. Joseph Early
Tenth District	.....Dr. John Watson

A proposed procedure for handling business of the House was outlined and a motion of approval adopted.

Committee chairmen were then given an opportunity to present supplemental reports. A supplemental report by the Medical Service Committee on the "Virginia 65 Plan" was referred to Reference Committee #2. Dr. Ennion Williams, representing the health insurance industry, explained the purpose of the Plan and how it should help meet the problem of those over 65. He indicated that insurance companies in North Carolina will also participate in the "65 Plan".

A supplemental report of the Judicial Committee, having to do with the terms of office of Speaker and Vice-Speaker, was referred to Reference Committee #1.

A supplemental report of the Committee on Medical Education was referred to Reference Committee #2.

Although a formal supplemental report of the Committee for Liaison with the Nurse Examiners & Organized Nursing was not presented, Dr. Mapp, Committee Chairman, did stress the importance of physicians and nurses maintaining effective liaison. He told of AMA's interest in working as closely as possible with nursing, and advised the House of a meeting soon to be held at Williamsburg under the sponsorship of the AMA Committee on Nursing.

Dr. Hundley commented on a report by a special committee interested in the State-Local Hospitalization Program, and invited members of the House to attend a Conference to be held in Roanoke on October 17. The Conference was designed to increase the effectiveness of SLH.

Dr. Wright was then called upon to report those actions taken by Council during its meeting earlier in the day. Complete minutes of the Council meeting can be found in this issue. A recommended TV

series, a resolution dealing with drug regulations and a proposed auto crash injury program were referred to Reference Committees.

Dr. Hogg, Chairman of the Finance Committee, presented his committee's report and offered a proposed budget for fiscal 1963-64. The budget had previously been reviewed by Council.

The House learned that the Society's financial position was greatly improved over last year. This was attributed to the dues increase which became effective January 1 and also to the fact that the anticipated battle with King-Anderson failed to materialize. The proposed budget was referred to Reference Committee #1.

Dr. McCausland introduced the following resolution which, due to its special nature, was adopted without referral:

BE IT RESOLVED: That Dr. Benedict Nagler be nominated to receive the award of the President's Committee for the Physically Handicapped and the Governor's Award Committee as the doctor doing the most toward the employment of the physically handicapped in Virginia.

A proposed amendment to Section 2, Article III, of the By-Laws was introduced by Dr. Thompson. The resolution, which was referred to Reference Committee #1, further clarified the situation of the member belonging to a society composed of physicians of adjoining Congressional Districts.

A resolution opposing any legislation which would further remove clinical psychologists from collaboration with the medical profession was introduced by Dr. Murrell and referred to Reference Committee #2.

Dr. Titus, on behalf of the Alexandria Medical Society, introduced a resolution urging legislation to increase by 100% the deduction for medical expenses under Virginia's Income Tax Statutes. The resolution was referred to Reference Committee #2.

Dr. Barker then read a resolution which had been incorporated into the supplemental report of the Committee on Medical Education. The resolution approved the principle of permitting the Board of Medical Examiners to relax certain requirements in the case of distinguished foreign physicians being sought by the State's two medical schools.

Another proposed amendment to the By-Laws was introduced by Dr. Walton and referred to Reference Committee #1. The amendment had to do with the make-up of Council.

Dr. Ward introduced, on behalf of the Hampton Medical Society, a resolution calling for positive

action in the establishment of universal medical coverage through private enterprise. The resolution was referred to Reference Committee #1.

The House heard a report by Dr. Stokes on new convention facilities in Williamsburg. It was believed that the new facilities were such that an Annual Meeting of the Society could be handled without difficulty. (The 1966 Annual Meeting will be held in Williamsburg from November 6-9).

Dr. Wright advised the House of a meeting of the World Medical Association to be held in New York, and stated that members of the Society had been invited to attend.

There being no further business, the meeting was adjourned.

SECOND SESSION

The Second Session of the House of Delegates was called to order by Dr. W. Callier Salley, Vice-Speaker, at 3:30 P.M. on Tuesday, October 8, 1963, in the Colonial Room of Hotel Roanoke.

A quorum was reported by Dr. James P. Charlton, Chairman of the Credentials Committee.

The regular order of business was temporarily suspended in order that Dr. Wright could introduce Dr. Edward R. Annis, President of the American Medical Association. Dr. Annis briefly addressed the House and told of the scientific progress being made by medicine all over the country.

Dr. Wright was then requested to present the report of Reference Committee #1. On the recommendation of the committee, the following reports were accepted: Executive Secretary-Treasurer; AMA Delegates; Publication; House; Walter Reed Commission; Advisory to Medical and Allied Organizations; Blue Shield Directors; and Liaison to Department of Public Welfare.

The House then approved a committee recommendation that it urge an appropriate subcommittee of the Medical Service Committee to consider studying the possibility of achieving State-wide Blue Shield coverage by combining existing Blue Shield Plans.

Also adopted was a recommendation that a further study be conducted as to the advisability of obtaining State-wide Blue Cross coverage by combining existing Blue Cross Plans. A minority vote by Dr. Hatfield was made a matter of record.

The House concurred with a committee recommendation that the report of the Special State-Local Hospitalization Committee be adopted. The report requested that the Legislative Committee be directed

to support implementation by the Virginia General Assembly of the following three objectives:

1. To realistically appraise the needs and stimulate increased financial support of the State-Local Hospitalization Program, through more adequate appropriation by both State and local appropriating bodies.
2. To encourage liberalization of criteria so that corrective and rehabilitative services be provided to recipients with the objective of continuation of productive activity permitting self-support rather than confining participation only to emergency medical and surgical services.
3. To remove from the participating hospitals the excessive financial burden imposed under present policies by the failure of the political subdivisions of the State to meet their responsibilities under the law.

At the request of Dr. Wright, the Speaker presented that portion of the report having to do with recommendations of the Membership Committee. The report, adopted in its entirety, contained a recommendation that Dr. Fletcher J. Wright, Jr., be made an Honorary Active Member of the Society. Dr. Wright was commended on having led the Society through a most crucial year.

A special series of television programs, to be presented over WRVA-TV in Richmond, were approved. The programs, which will run five minutes a day—five days a week—for a minimum of thirteen consecutive weeks, have been offered the Society at no cost.

It was recommended by the Reference Committee that the first paragraph of Article V of the Constitution be amended as set forth in the report of the Judicial Committee. The purpose of the amendment is to make it clear that the Speaker and Vice-Speaker are officers of the Society and that the ticket prepared by the Committee on Nominations shall contain nominations for these positions.

The Reference Committee also recommended that Section 7, Article V, of the By-Laws be amended as proposed in the Judicial Committee report. The recommendation was adopted. These amendments eliminate the necessity of a vote by ballot where there is no contest.

Also adopted were amendments to Section 1 and Section 4 of Article VI of the By-Laws. The amendment to Section 1 would again avoid the necessity of a vote by ballot where there is no contest, and that to Section 4 would make it conform to present practice.

A Reference Committee recommendation that Section 2, Article III, of the By-Laws be amended as

proposed in the Judicial Committee report was adopted. The purpose of this amendment is to provide that groups of physicians in political subdivisions in which there are no component societies, and which political subdivisions are in adjoining Congressional Districts, may unite to form a single component society. It also makes the test of eligibility for membership in such society the place of practice rather than place of residence.

Section 4, Article III, of the By-Laws was amended in such manner as to make place of practice, rather than place of residence, the test of eligibility for membership in a component society. The exception would be the physician practicing both in Virginia and an adjoining state or the District of Columbia.

A recommendation to amend Section 7, Article III, of the By-Laws was also adopted. This amendment makes place of practice, rather than place of residence, the test in determining the society which may give consent, and also to take care of a situation in which there is no component society in the political subdivision in which the physician practices.

The Reference Committee further recommended that Section 2, Article V, of the By-Laws be amended as published. The amendment makes place of practice rather than place of residence, the test of eligibility for voting for candidates and being a candidate for membership in the House of Delegates. It also governs apportionment of membership—except when a physician practices both in Virginia and an adjoining state or the District of Columbia.

Although the Reference Committee recommended that a proposed amendment to Section 1, Article VIII, of the By-Laws, as published in the Judicial Committee report, be rejected, the House voted that it be recommitted for further study. The amendment would have made place of practice, rather than place of residence, the test of eligibility for membership on Council.

The House, acting on a recommendation by the Reference Committee, rejected proposed amendments to Section 2 and Section 7 of Article III of the By-Laws.

In considering a proposed amendment to Section 1, Article VIII, of the By-Laws, as published in the Judicial Committee report, the House voted to recommit it for further study. The amendment was intended to clarify completely the question of eligibility for election to Council.

Considered next was an amendment to Section 2, Article III, of the By-Laws, as proposed by Dr. Thompson. The amendment, adopted as recommended by the Reference Committee, clarifies the

status of members of a society, relative to the House of Delegates, where membership of the society is derived from two or more adjoining Congressional Districts. Section 2 was amended by adding the following:

"In the event a member belongs to a society composed of physicians from adjoining Congressional Districts, he may vote for members of the House of Delegates, be a candidate for election to the House of Delegates, and be counted as a member of the society in the Congressional District in which the majority of its members have the major portion of their practice."

On the recommendation of the committee, three amendments to Section 4, Article VI, of the By-Laws were adopted. The second sentence of Section 4 was amended to read as follows:

"The House of Delegates shall also elect a Speaker and Vice-Speaker."

The purpose here is to make the terms of office of the Speaker and Vice-Speaker conform with those of other elected officers.

Section 4 was also amended by deleting the third sentence. This was done since this particular sentence was no longer applicable.

Section 4 was amended further by changing the fourth sentence to read as follows:

"In the event of a vacancy occurring in the office of Speaker or Vice-Speaker the President shall appoint a successor to serve through the next Annual Meeting."

This clarifies Section 4 by removing language no longer applicable in light of other proposed amendments.

Dr. Wright announced that a proposed amendment to the By-Laws introduced by Dr. Walton had been withdrawn at the request of the author, Dr. Stark. Dr. Walton had consented to the withdrawal.

Acting on a recommendation of the Reference Committee, the House adopted the following resolution introduced by Dr. Hatfield:

WHEREAS Organized medicine in the United States and in the State of Virginia has always found the Drug Industry to be loyal, cooperative and helpful in development of new drugs, biologicals and antibiotic agents; and

WHEREAS Through research, testing and clinical trial the Industry and the Medical Profession, working together, have attained one of the highest standards of therapeutic excellence and safety in the world; and

WHEREAS The highly complex nature of some therapeutic agents, accompanied, at times, by unsuspected and frightening secondary reactions, has motivated a reappraisal of the laws controlling the manufacture, testing and release for clinical use of these agents, and since some grave doubts exist as to the usefulness and effectiveness of some drugs and combinations of drugs, and since considerable concern has been expressed that duplications of basic generic substances under a variety of trade designations has resulted in unnecessary duplication; and

WHEREAS This situation has brought into existence many hastily written and basically unsound edicts, laws and regulations concerning the procedure necessary for the development, testing and marketing of new therapeutic agents;

THEREFORE BE IT RESOLVED That The Medical Society of Virginia affirm its support of both Federal and State efforts to enact laws and promulgate regulations necessary to control the manufacture and use of effective therapeutic agents; and

FURTHER BE IT RESOLVED That The Medical Society of Virginia challenge any edicts, laws or regulations now in existence which prevent or retard the investigation, manufacture, testing and clinical trial of substances promising to be of therapeutic value, or which deprive the manufacturer or user of speedy and fair appraisal of the efficacy and safety of such an agent; and

FURTHER BE IT RESOLVED That The Medical Society of Virginia express its unalterable opposition to the declaration or enactment of any edicts, laws or regulations which in any way hamper the speedy and orderly manufacturing, testing, marketing and use of promising therapeutic agents; and

FURTHER BE IT RESOLVED That The Medical Society of Virginia recommend to the President of the United States, the Congress of the United States and the Federal Food and Drug Administration a reassessment and reappraisal of the presently existing edicts, laws and regulations in order to eliminate any unjust, delaying or unnecessarily expensive requirements incident to the development and marketing of drugs; and

FURTHER BE IT RESOLVED That The Medical Society of Virginia recommend to the Federal Food and Drug Administration the utilization of independent clinical investigators and outstanding clinicians in the testing of new drugs and reappraisal of older therapeutic agents, and request that greater use be made of the vast experience and wisdom available within the medical profession in this matter which so closely concerns it, and in which it is so vitally interested; calling the attention of all concerned to the evident truth that, in the final analysis, the individual medical practitioner alone is responsible for all the effects, both desirable and undesirable, which result from the administration of therapeutic agents and that no one has greater concern for the purity, safety and efficacy of drugs and biologicals.

The following budget for fiscal 1963-64, as recommended by the committee, was adopted:

Executive Office:

Salaries	\$ 36,390.00
Telephone & Telegrams	1,500.00
Postage	3,000.00
Stationery & Supplies	2,000.00
Office Equipment	700.00
Building Maintenance	6,000.00
Convention Expenses	1,000.00
Council & Committee Expense	1,600.00
Delegates to AMA	2,600.00
Executive Assistant Travel	275.00
President's Expense	1,000.00
Travel	2,000.00
Virginia Medical Monthly	35,000.00
Scientific Exhibits	3,000.00
Legal Expense	4,000.00
Walter Reed Commission	500.00
Woman's Auxiliary	100.00
Membership Dues (Affiliated Organizations)	215.00
Editor—Virginia Medical Monthly	600.00
Virginia Council on Health & Medical Care	3,000.00
AMA-ERF	2,000.00
AMA Student Loan Program	1,000.00
National Society Medical Research	150.00
Rural Health	500.00
Miscellaneous—AMA	500.00
News and Views	5,000.00
Retirement Fund	4,600.00
Social Security	750.00
VaMPAC	1,000.00
Maternal Death Study	250.00
State-Local Hospitalization Conference	750.00
Scholarships to University of Virginia School of Medicine & MCV School of Medicine	2,000.00
Miscellaneous	600.00

Public Relations:

Conference Expense	1,000.00
Radio and Press	100.00
Literature & Bulletins	150.00
Miscellaneous Projects	300.00
TOTAL EXPENSES	\$125,130.00

It was reported that the committee, after careful consideration, recommended that the resolution introduced by Dr. Ward on behalf of the Hampton Medical Society be tabled. While it was agreed that the resolution possessed a great deal of merit, it was pointed out that the American Medical Association was striving to bring about the most complete health coverage possible for persons of all ages. The House accepted the committee's recommendation.

Dr. Wright moved that the House adopt the report as a whole, taking note of amendments. The motion was seconded and adopted.

Dr. Salley requested Dr. James M. Moss to present the report of Reference Committee #2.

It was the committee's recommendation that the following committee reports be accepted: Principles and Policies; Medical Service; Public Relations; Medication; Ethics; Mental Health; Traffic Safety; Tuberculosis; Insurance; National Emergency Medical Service; Child Health; Radiation Hazards; To Confer with U. M. W. Welfare Fund; Rehabilitation; Alcoholism; Medical Education; Conservation of Sight; Liaison to State Bar; Aging and Chronically Ill; Cancer; Medicare Advisory; and National Legislation.

The report of the Committee on Maternal Health was also accepted. The House, however, approved an action by Council which would refer back to the Maternal Health Committee its proposed interpretation of that portion of the Virginia Maternity Hospital Law pertaining to compatible whole blood.

A supplemental report of the Committee on Medical Education was adopted. The following resolution, contained in the report, was amended by inserting the words "full time teaching" before the words "member of his respective faculty":

BE IT RESOLVED That the Medical Education Committee recommends that The Medical Society of Virginia approve the principle of, and support a change in the Code to allow the State Board of Medical Examiners to relax some of these requirements—only at the request of the governing bodies of the two medical schools and only to apply as long as the individual concerned is a full time teaching member of his respective faculty.

The House then adopted the following resolution, introduced by Dr. Savage, endorsing in principle the "Virginia 65 Plan":

RESOLVED that the House of Delegates of The Medical Society of Virginia endorse in principle the "Virginia 65 Plan" and recommend that its Legislative Committee render any assistance possible in the passage of necessary legislation in order to make available to the people of Virginia over 65 years of age an opportunity to purchase through private insurance channels, if they wish to do so, insurance covering prepaid medical care on a basic and catastrophic basis.

It was the recommendation of the Reference Committee that the resolution affecting clinical psychologists be adopted. The resolution, which had been introduced by Dr. Murrell, was adopted as follows:

BE IT RESOLVED that The Medical Society of Virginia is opposed to any change in the Code of the

laws in the State of Virginia, as presently written, which would, as applying to the field of certification of clinical psychologists further remove this group from collaboration with the medical profession of the State of Virginia.

Also adopted was the report of the Liaison Committee to Nurse Examiners and Organized Nursing. Contained in the report was a recommendation that the Legislative Committee seek and support legislation making it possible for properly trained nursing or technical personnel to perform veni-vunctures for the taking of blood, for certain infusions, making insertions of Levin tubes and carrying out closed chest cardiac massage when indicated.

At the request of the Reference Committee, a new automative crash injury project, soon to be conducted in Virginia by Cornell University was approved.

Recommended for adoption by the committee was a resolution urging legislation to increase by 100% the deduction for medical expenses under Virginia Income Tax Statutes. The resolution, sponsored by the Alexandria Medical Society, was adopted as follows:

WHEREAS The Alexandria Medical Society is cognizant of the considerable burden that may be sustained by a family who experiences above-average medical and hospital expenses in a given year; and

WHEREAS it is the responsibility of organized medicine to consider methods of reducing these financial burdens; and

WHEREAS the Congress of the United States in 1962 saw fit to raise the deductible allowance for medical expenses for the Federal income tax;

THEREFORE BE IT RESOLVED that The Alexandria Medical Society urges The Medical Society of Virginia to support legislation to increase by 100% the deduction for medical expenses under the Virginia Income Tax Statutes.

Dr. Moss moved that the report as a whole be adopted. The motion was seconded and carried.

Dr. George S. Hurt, Chairman, then presented the report of the Committee on Nominations. The following nominees were elected:

President-Elect: Dr. McLemore Birdsong
1st Vice-President: Dr. John A. Martin
2nd Vice-President: Dr. J. A. White
3rd Vice-President: Dr. Thomas S. Edwards
Executive Secretary-Treasurer: Robert I. Howard

The following Councilors were elected:

First District: Dr. F. Ashton Carmines
Third District: Dr. Thomas W. Murrell, Jr.
Fifth District: Dr. W. N. Thompson

Seventh District: Dr. Dennis P. McCarty

Ninth District: Dr. W. W. Walton

Nominations to be submitted to the Governor for appointment to the State Board of Medical Examiners from the 5th District were announced as follows:

Dr. Walter C. Fitzgerald

Dr. Jethro H. Irby, Jr.

Dr. W. D. R. Driscoll

The House was advised that the terms of Dr. W. Linwood Ball and Dr. Allen Barker as Delegates to the American Medical Association expire on December 31. The names of Dr. Ball and Dr. Barker were immediately placed in nomination and both were re-elected for two year terms, beginning January 1, 1964. Dr. Russell Buxton and Dr. W. Callier Salley were also re-elected as Alternate Delegates.

Dr. Moss was then granted permission to introduce a resolution commending the Committee on Arrangements and the Hotel Roanoke staff on their contributions to the 1963 Annual Meeting. An amendment was adopted which included the Chairman and members of the Program Committee. The following resolution, as amended, was adopted unanimously:

BE IT RESOLVED that this House of Delegates recognize and commend the Committee on Arrangements of the Roanoke Academy of Medicine and the Program Committee of The Medical Society of Virginia for the exceptional jobs they have done in connection with the 1963 Annual Meeting; and

BE IT FURTHER RESOLVED that the staff of Hotel Roanoke also be commended for its part in making this easily one of the best in the long history of the Society.

Dr. Wright presided during the installation of Dr. Palmer as President and presented him the gavel as the traditional symbol of office.

Dr. Palmer, as his first official act, presented Dr. Wright with an engraved gavel and Certificate of Appreciation. It was also announced that a similar gavel was being sent Dr. Russell Buxton, President during 1961-62.

There being no further business, the meeting was adjourned.

ROBERT I. HOWARD
Secretary

Approved:

FLETCHER J. WRIGHT, JR., M.D., *President*

The amendment to the first paragraph of Article V of the Constitution was ratified at a general meeting of the Society on Wednesday morning, October 9, 1963.

Members of the House are requested to submit any corrections to the minutes in writing.

Fifty Year Members—1963

Otis Taylor Amory, M.D., Newport News
Marshall Lewis Boyle, M.D., Richmond
Estill Leftridge Caudill, M.D., Elizabethton, Tennessee
Challis Haddon Dawson, M.D., Suffolk
Michael George Dewey, M.D., Buckroe Beach
Beverley Fitzwilson Eckles, M.D., Richmond
James Obediah Fitzgerald, M.D., Richmond
Ernest Franklin Flora, M.D., Boones Mill
Isaac Harry Goldman, M.D., Richmond
Clark Henry Hagenbuch, M.D., Roanoke
James Davis Hagood, M.D., Clover
Rogers Newton Harris, M.D., Port Royal
Jeremiah Aloysius Hart, M.D., Utica, New York
George Samuel Hurt, M.D., Roanoke
Frank Stoddard Johns, M.D., Richmond
Wiley Warren Johnston, M.D., Manteo, North Carolina
Francis Harrison Lee, M.D., Richmond
Ludwell Fitzhugh Lee, M.D., Fredericksburg
William Lloyd Mason, M.D., Richmond
Vernon Wood Quillen, M.D., Nickelsville
Simon Harry Rosenthal, M.D., Lynchburg
Grover Cleveland Sumpter, M.D., Rose Hill
Martillus Hollis Todd, M.D., Virginia Beach
Albert Pierce Traynham, M.D., Sweetsprings, W. Va.
John Quincy Adams Webb, M.D., Norfolk
Abraham Isaac Weinstein, M.D., Richmond
Carrington Williams, Sr., M.D., Richmond
Tom Albert Williams, M.D., Middletown
Robert Woodside Woodhouse, M.D., Virginia Beach

Members Whose Deaths Have Been Reported Since 1962 Annual Meeting

Benjamin Herman Bailey, M.D.
Hugh Tucker Chelf, M.D.
Robert Hoyt Flynn, Jr., M.D.
Jesse Hughes Mabry, M.D.
Edward Barney Smith, M.D.
Hugh Edgar Clark, M.D.
Hubert Taylor Dougan, M.D.
Charles Preston Mangum, M.D.
Jeter Roy Allen, M.D.
William Thomas Dodd, M.D.
Michael John Keith, M.D.
Lawrence Owen Snead, M.D.
Vaiden Aubrey Thornton, M.D.
James Morehead Whitfield, Jr., M.D.
Henry Stapleton Daniel, M.D.
John Moyer Meredith, M.D.
Frederick Edward Vultee, Jr., M.D.
John Franklin Woodward, M.D.
William Wilson Samuel Butler, Jr., M.D.
Walter Cleveland Caudill, M.D.
Charles Morris Nelson, M.D.
Charles Bayne Stringfellow, M.D.
Felix Brent Wilson, M.D.

George Wesley Hooker, M.D.
Bickerton Lewis Phillips, M.D.
William Almon Shepherd, M.D.
James W. Anderson, M.D.
Morris Bryan Beecroft, M.D.
Meade Castleton Edmunds, M.D.
Charles Walker Putney, M.D.
Elliott D. Floyd, M.D.
Edward Lewis Johnson, M.D.
John Randolph Tucker, M.D.
George Bentley Byrd, M.D.
Samuel Clarence Couch, M.D.
Robert Sydney Cunningham, M.D.
Grossi Hamilton Francis, M.D.
Robert Bruce Mallet, M.D.
William Oliver Porter, M.D.
William Edward Smith, M.D.
Edward Lee Alexander, M.D.
Regena Johnson Beck, M.D.
Maynard Robert Emlaw, M.D.
Mark Roy Faville, M.D.
Stuart Wray Seldon, M.D.
Thomas Henning Anderson, M.D.
Charles Lewis Baird, M.D.
Henry Hamilton Hammer, M.D.
Edward Butts Kilby, M.D.
Adlai Ewing Stephenson Lilly, M.D.
Harold Wilbur Miller, M.D.
Antonio Fulvio Palmieri, M.D.
Fred Clifton Downey, M.D.
J. B. Woodson, M.D.
Baxter Israel Bell, Sr., M.D.
Beverley Randolph Wellford

The following reports, while accepted by the House of Delegates, have not been published previously.

Liaison To Department of Welfare

The Advisory Committee to the State Department of Welfare and Institutions met at the Department Headquarters in Richmond on August 4, 1963, with Drs. Bates, Felton, Fletcher J. Wright, Jr., and Hundley present, in addition to Mr. Howard, Executive Secretary, and members of the State Department staff.

Discussion revolved particularly around the proposals for implementation of the Medical Assistance to the Aged (Kerr-Mills) program which becomes operative in Virginia on January 1, 1964. The proposals and criteria presented by the State Department of Welfare were discussed and minor recommendations made. The final material and regulations from the State Welfare Board is not yet available.

The second item discussed was the proposal of the Department to extend the method of direct medical-vendor payments to the dispensors of services to public assistance recipients. In the past, these have been included in the check to the recipient who was responsible for, but frequently failed to make, the pay-

ments to the vendor of the services. While there was same hesitation regarding the change in method of payment, the committee felt, and so voted, that the freedom of choice of physician, and the patient-physician relationship, was protected under the proposed regulations, and the proposed change was approved.

Discussion of The Medical Society of Virginia, Virginia Hospital Association, and the Virginia Council on Health and Medical Care, joint committee to improve and extend the participation in and functioning of the State-Local Hospitalization law of Virginia followed, and the objectives of the committee were approved.

JOHN T. T. HUNDLEY, M.D., *Chairman*

Maternal Health

Over the years, the primary approach of the Committee on Maternal Health has been a detailed examination of the maternal deaths in the State. These analyses have contributed to the improvement of maternal welfare through various channels, including direct reports where requested, medical education, recommendations for legislation, and advice to the State Health Department. The cooperation of the State Health Department in assembling, analyzing, and using this information has been of great value. This has made the Maternal Mortality records in Virginia superior to those in most states and therefore more useful and more valuable.

During this year the staff changes in the Health Department have made it impossible for them to assemble the case data as in the past, and temporary measures financed jointly by The Medical Society of Virginia and the State Health Department are being taken with the hope that the previous system may soon be re-established.

In order to obtain the greatest benefit from the material already available, a study of the maternal mortality cases in the past ten years is being undertaken and will be reported next year.

The Committee has repeatedly encountered cases of maternal mortality in which acute unpredictable hemorrhage occurred and blood for replacement was not promptly available at the facility to which the patient had come for delivery or had been referred for care of the complication. The Committee believes that preventable loss of life has occurred due to this circumstance.

The Committee appreciates the problem of expense involved when small isolated facilities must maintain a constant supply of blood and it observes an under-

standable tendency to interpret differently the State Maternity Hospital Law requiring "an available source of supply of blood" and the interpretation that "compatible blood must be available for administration within a reasonable time."

The Committee believes that a more precise definition of an acceptable availability of blood would be useful and would be important to the proper protection of parturients. It recommends the following specific interpretation:

"Compatible whole blood shall be available for transfusion in a severe emergency at the bedside within thirty minutes of the time it is requested."

This attempt to establish minimum guide lines for minimum conditions should not be interpreted as license to avoid complete cross matching in the usual emergency requiring possibly longer than thirty minutes. The importance of adequate cross matching is emphasized.

In order to afford protection, compatible with accepted current standards, blood of the four blood groups, including Rh negative blood, equipment and personnel for cross matching should be on the premises or in the immediate vicinity.

In the *unusual case* where geography makes a small facility indicated in the public interest after thorough study of all alternatives, the above requirement for the emergency availability of blood to be used only in dire emergencies and while cross matching of more adequate nature is in progress at a more distant point may be considered to be met if two pints of Group "O" Rh negative blood of reasonable freshness are available in the hospital. These presumably would have anti-a and b substances added before use and would be rotated at reasonable intervals to be used elsewhere before expiration. This blood also should be cross matched. It would be hoped that such limited facilities would be rare and become rarer.

The maternal death rate in Virginia has continued to decline to 3.7 per one hundred thousand live births in 1962 compared to 4.9 in 1961. This generally favorable rate can certainly be reduced by (1) better and more comprehensive prenatal care, especially for indigents; (2) continued improvement and extension of post graduate education; (3) increased hospitalization for indigents; (4) advances in medical science; (5) improved administrative procedures and requirements in hospitals in certain cases; and (6) eternal medical vigilance. The infant death rate has remained fairly constant since 1955 and constitutes a special challenge to the medical profession.

MASON C. ANDREWS, M.D., *Chairman*

National Legislation

The past twelve months, we are pleased to report, have been surprisingly quiet. This, of course, can be attributed to the fact that the President's controversial tax program has occupied the attention of just about everyone in the Administration, and Medicare has been waiting in the wings for a chance to get back "on stage".

It could well be that by the time this report is published, hearings on Medicare (H.R. 3920) by the House Ways and Means Committee will be under way once again. In anticipation of this event, a four-page statement has been prepared for presentation before the Ways and Means Committee at the proper time. The statement points out how Virginia has met its health care problems over the years—not only for those over 65, but for the medically indigent of all ages.

For the fourth consecutive year, your Committee honored Virginia's Congressional delegation with a luncheon at the Capitol in Washington. We realize more each year how fortunate we are to have such able and dedicated men representing our State. Most of them have made it quite clear that they are unequivocally opposed to providing health care for the aged through the Social Security mechanism.

While we are thankful that the preceding months have been comparatively quiet so far as Medicare is concerned, we are watching developments closely and stand ready to move as the situation dictates.

HARRY C. BATES, JR., M.D., *Chairman*

VINCENT W. ARCHER, M.D.,

Vice-Chairman & Special Consultant

PAUL HOGG, M.D.

K. K. WALLACE, M.D.

THOMAS W. MURRELL, JR., M.D.

A. TYREE FINCH, JR., M.D.

WILLIAM N. THOMPSON, M.D.

ALEXANDER McCausland, M.D.

DENNIS P. McCARTY, M.D.

JAMES G. WILLIS, M.D.

C. C. HATFIELD, M.D.

MICHAEL A. PUZAK, M.D.

Blue Shield Directors

The past year has been one of continued growth for Blue Shield. At July 31, 1963, an all-time high of 1,675 physicians participated in Virginia Medical Service Association. This represents about 83 percent of the physicians actively engaged in the practice of medicine in this area.

Enrollment in Blue Shield, including Federal Employees, also reached a record high of 529,278 as of July 31, 1963. In addition to the higher number of persons covered, a continuous program of uplifting the level of benefits available to members has been under way. 291,956 participants, or 55 percent of the total Blue Shield enrollment, are now enrolled under the Blue Shield Comprehensive Contract which provides higher fees for physicians' services, higher income limits for full-service benefits (\$6,000 per family) and which, of course, has a higher subscriber-rate than the Blue Shield Standard Contract. Increased coverage to members is also being offered under the Major Med-X which was first introduced in 1962 and which, at July 31, was held by 30,126 members.

Since the first of this year, a special Fee Schedule Committee of the Blue Shield Board of Directors has been meeting with representatives from the various specialty societies discussing the scope of benefits being offered the public by Blue Shield and the fees to be paid to physicians for covered services. These meetings have now been concluded, and a report from the Fee Schedule Committee will be made to the Blue Shield Board of Directors at its meeting on Tuesday, October 22, 1963. The specialty societies' representatives have generally approved the use of the Blue Shield Professional Services Index. The actual dollar-value of each unit will be determined by the Blue Shield Board of Directors and will reflect the need for adjusted payments to physicians, as well as the effect on the rates charged to subscribers.

For some years it has been evident that one of the major problems confronting Blue Shield is the inability to develop a program which adequately satisfies the needs of national accounts. Although it is true that the Plans operating in the more highly industrialized states are more concerned with National Account enrollment, it is important that each Blue Shield Plan be in a position to offer similar programs which provide for uniformity in scope of benefits, administrative regulations, and income levels for full-service benefits. This item was reviewed by the Blue Shield Board of Directors at its meeting on July 9, 1963, and the Board approved the adoption of the National Account Contract which provides full-service benefits for families with incomes up to \$7,500 per year and which utilizes the Professional Services Index.

The Plan's staff has met with representatives from the State Health and Welfare Departments to explore the possibility of Blue Cross and Blue Shield un-

derwriting or administration of the Medical Assistance to the Aged and the Old Age Assistance Programs in Virginia. A number of other Plans, notably New Jersey, have made arrangements to handle these programs and we're hopeful that similar arrangements can be established in Virginia. Blue Cross and Blue Shield have demonstrated their ability to handle such programs based on their experience in the administration of programs such as Medicare and the Federal Employee enrollment.

Blue Shield continues to serve the interests of its subscribers and the medical profession. The series of meetings with the various specialty societies, referred to earlier, is a perfect example of the doctor-sponsored Plan at work. Certainly medicine would not have the opportunity to express itself and help establish plan policy with any other type of prepayment program. Blue Shield needs the participation and support of all physicians if it is to continue its outstanding record of services.

W. CALLIER SALLEY, M.D., *Chairman*

Auditor's Report

OFFICERS AND COUNCILORS
THE MEDICAL SOCIETY OF VIRGINIA
RICHMOND, VIRGINIA

GENTLEMEN:

We have made an examination of the books and records of THE MEDICAL SOCIETY OF VIRGINIA, RICHMOND, VIRGINIA, for the fiscal year ended September 30, 1963, and have prepared therefrom the Balance Sheet, Exhibit "A", Statement of Surplus, Exhibit "B", and Statement of Income and Expenses, Exhibit "C". With the exceptions noted in the immediately following paragraph, our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

We did not verify the accounts receivable by direct correspondence with the debtors, nor did we verify the accounts payable. It will be noted from the balance sheet that the amounts of these items are not material in relation to the financial position as a whole.

It is our opinion that the Balance Sheet, Exhibit "A", presents fairly the financial position of the Society at September 30, 1963, in accordance with generally accepted principles of accounting. The Statement of Income and Expenses, Exhibit "C", is prepared on a basis of cash actually received and disbursed.

Yours very truly,
MITCHELL, WIGGINS & COMPANY
By CHARLES W. ANDERSON
Certified Public Accountant

BALANCE SHEET

September 30, 1963

ASSETS

GENERAL FUND	
Cash in banks.....	\$ 105,508.43
Accounts receivable:	
Dues from members—Estimated collectible value—	
1962 dues—50 @ \$10.00.....	\$ 2,000.00
Advertising—Virginia Medical Monthly.....	3,008.78
	5,008.78
Investments:	
United States Savings Bonds—Present value (Schedule 1).....	19,935.00
	<u>\$ 130,452.21</u>
PLANT FUND	
Land and buildings—At cost (Schedule 2).....	\$ 112,073.67
Furniture and equipment: (Schedule 2)	
Estimated value—October 1, 1950.....	\$ 5,353.11
Cost of acquisitions since October 1, 1950.....	7,701.30
	13,054.41
	<u>\$ 125,128.08</u>
	EXHIBIT "A"

LIABILITIES AND SURPLUS

GENERAL FUND	
Accounts payable:	
Preparation of Medical Journal—September, 1963.....	\$ 2,378.47
Surplus:	
Available for appropriation:	
Balance—September 30, 1963 (Exhibit "B").....	128,073.74
	<u>\$ 130,452.21</u>
PLANT FUND	
Surplus invested in plant assets (Exhibit "B").....	\$ 125,128.08
	<u>\$ 125,128.08</u>

STATEMENT OF SURPLUS

For the Fiscal Year Ended September 30, 1963

EXHIBIT "B"

GENERAL FUND	
Balance—October 1, 1962.....	\$ 89,211.16
Add:	
Excess of income over expenses (Exhibit "C").....	\$38,139.74
Decrease in accounts payable.....	921.53
	39,061.27
Total.....	<u>\$ 128,272.43</u>
Deduct:	
Decrease in accounts receivable.....	\$ 44.19
Decrease in bond interest adjustment.....	154.50
	198.69
Balance—September 30, 1963 (Exhibit "A").....	<u>\$ 128,073.74</u>
PLANT FUND	
Balance—October 1, 1962.....	\$ 125,128.08
Changes.....	None
Balance—September 30, 1963 (Exhibit "A").....	<u>\$ 125,128.08</u>

STATEMENT OF INCOME AND EXPENSES

For the Fiscal Year Ended September 30, 1963

EXHIBIT "C"

	Actual	Budget
GROSS INCOME		
Membership dues.....	\$ 99,111.00	
Interest on investments.....	2,498.03	
American Medical Association.....	703.92	
Reprints—Civil War Centennial Issue.....	235.00	
Miscellaneous.....	81.70	
Virginia Medical Monthly:		
Advertising.....	\$ 27,683.43	
Subscriptions—Nonmembers.....	363.52	
	<u>28,046.95</u>	
Total.....	<u>\$ 130,676.60</u>	
EXPENSES		
Executive office:		
Salaries.....	\$ 32,281.08	\$ 34,890.00
Telephone and telegrams.....	1,383.19	1,400.00
Postage.....	1,817.23	3,000.00
Stationery and supplies.....	1,814.58	1,500.00
Office equipment—Repairs and replacements.....	386.02	625.00
Building maintenance and repairs—Net.....	3,927.86	6,000.00
Convention expense.....	(5,651.01)	1,000.00
Council and committee expense.....	1,104.85	2,000.00
Executive assistant—Travel.....	282.86	250.00
Delegates to American Medical Association.....	2,039.31	2,000.00
President's expense.....	188.86	1,000.00
Travel expense.....	1,574.18	2,000.00
Preparation and distribution of medical journal.....	31,542.17	38,000.00
Scientific exhibits.....		2,500.00
Legal expense.....	2,915.00	3,000.00
Walter Reed Commission.....	423.26	500.00
Woman's Auxiliary.....	34.00	100.00
Membership dues—Affiliated agencies.....	215.00	200.00
Editor—Virginia Medical Monthly.....	600.00	600.00
Special appropriations:		
Virginia Council Health and Medical Care.....	3,000.00	3,000.00
American Medical Education Foundation.....	2,000.00	2,000.00
Student loan.....	1,000.00	1,000.00
National Society Medical Research.....	150.00	150.00
Rural Health.....	500.00	500.00
Virginia Medical Political Action Committee.....	500.00	500.00
Other special appropriations.....	746.68	1,435.45
News and views.....	886.31	5,000.00
Employees' retirement fund.....	4,280.65	4,300.00
Social security taxes.....	705.87	750.00
Miscellaneous.....	912.23	900.00
Total—Executive Office.....	<u>\$ 91,560.18</u>	<u>\$ 120,100.45</u>
Public relations department:		
Conference expense.....	\$ 915.58	\$ 1,000.00
Radio and press.....		100.00
Literature and bulletins.....	61.10	150.00
Miscellaneous.....		300.00
Total—Public Relations Department.....	<u>\$ 976.68</u>	<u>\$ 1,550.00</u>
Total Expenses.....	<u>\$ 92,536.86</u>	<u>\$ 121,650.45</u>
Excess of Operating Income Over Operating Expenses (Exhibit "B").....	<u>\$ 38,139.74</u>	

FINANCIAL CONDITION

The financial condition of the Society at September 30, 1963, is shown in the Balance Sheet, Exhibit "A", on the accrual basis. A comparative summary of the financial condition at September 30, 1963, and the two preceding years is presented as follows:

	SEPTEMBER 30,		
	1963	1962	1961
ASSETS			
Cash.....	\$ 105,508.43	\$ 65,148.69	\$ 81,200.67
Accounts receivable.....	5,008.78	5,052.97	5,694.91
Investments.....	19,935.00	22,309.50	21,730.00
Land, buildings and equipment.....	125,128.08	125,128.08	125,128.08
Totals—All Funds.....	<u>\$ 255,580.29</u>	<u>\$ 217,639.24</u>	<u>\$ 233,753.66</u>
LIABILITIES, SURPLUS AND FUND BALANCE			
Liabilities:			
Accounts payable.....	\$ 2,378.47	\$ 3,300.00	\$ 3,300.00
Surplus:			
General fund.....	128,073.74	89,211.16	105,325.58
Fund balance:			
Plant fund.....	125,128.08	125,128.08	125,128.08
Totals—All Funds.....	<u>\$ 255,580.29</u>	<u>\$ 217,639.24</u>	<u>\$ 233,753.66</u>

CASH—\$105,508.43

Recorded cash receipts were accounted for by deposits in the banks and disbursements were supported by properly signed and endorsed cancelled checks. The balances on deposit at September 30, 1963, were verified by direct correspondence with the banks as follows:

First and Merchants National Bank—Checking account.....	\$ 62,462.49
Bank of Virginia—Savings account.....	9,517.92
Southern Bank and Trust Company—Savings account.....	1,322.25
Franklin Federal Savings and Loan Association—Savings account.....	13,258.46
Richmond Federal Savings and Loan Association—Savings account.....	18,947.31
Total.....	<u>\$ 105,508.43</u>

INVESTMENTS—\$19,935.00

United States Savings Bonds, as shown in Schedule 1, were verified by inspection of the securities held in a safe deposit box at First and Merchants National Bank, Richmond, Virginia. They are shown in the balance sheet at their current redemption value.

PLANT FUND ASSETS—\$125,128.08

Details of the plant fund assets are shown in Schedule 2. No indebtedness against these assets was disclosed by the books.

OPERATIONS

The income and expenses for the fiscal year ended September 30, 1963, are shown in Exhibit "C", prepared on the cash receipts and disbursements basis. A summary of income, expenses, and capital outlays for the current year are compared with that of the two preceding years as follows:

	FISCAL YEAR ENDED SEPTEMBER 30,		
	1963	1962	1961
INCOME			
Membership dues.....	\$ 99,111.00	\$ 63,734.75	\$ 62,263.75
Medical monthly publication.....	28,046.95	31,106.86	36,247.35
Other operating income.....	3,518.65	2,369.15	1,793.19
Totals.....	<u>\$130,676.60</u>	<u>\$ 97,210.76</u>	<u>\$100,304.29</u>
EXPENSES			
Executive office.....	\$ 91,560.18	\$113,120.05	\$100,333.58
Public relations department.....	976.68	142.69	1,010.45
Totals.....	<u>\$ 92,536.86</u>	<u>\$113,262.74</u>	<u>\$101,344.03</u>
Operating Income Over (Under) Expenses	<u>\$ 38,139.74</u>	<u>(\$ 16,051.98)</u>	<u>(\$ 1,039.74)</u>

PLANT FUND ASSETS

September 30, 1963

LAND AND BUILDINGS—At Cost		Schedule 2
4205 Dover Road, Windsor Farms, Richmond, Va.:		
Land.....	\$22,706.58	
Office buildings.....	86,161.68	
Furnishings and decorations	2,205.41	
	<u>\$ 111,073.67</u>	
Walter Reed House, Belroi, Va.....	1,000.00	
Total Land and Buildings.....	<u>\$ 112,073.67</u>	
OFFICE FURNITURE AND EQUIPMENT		
Estimated insurable value at October 1, 1950.....	\$ 5,353.11	
Purchased subsequent to October 1, 1950:		
Cost during fiscal year ended September 30, 1951	\$ 951.65	
Cost during fiscal year ended September 30, 1959	6,749.65	
	<u>7,701.30</u>	
Total Office Furniture and Equipment.....	<u>\$ 13,054.41</u>	
Total Plant Fund Assets (Exhibit "A").....	<u>\$ 125,128.08</u>	

IN GENERAL

The bookkeeping records were found to have been kept in a satisfactory manner.

Insurance in force at September 30, 1963, determined from policies on file, is shown below:

FIRE AND EXTENDED COVERAGE	
Building—Windsor Farms, Richmond, Va.—80% Coinsurance.....	\$ 69,000.00
Office furniture and fixtures—80% Coinsurance.....	15,000.00
Walter Reed House, Belroi, Va.....	2,000.00
LIABILITIES—OWNER'S, LANDLORD'S AND TENANT'S	
Bodily injury.....	\$ 50,000.00—\$ 100,000.00
Property damage.....	5,000.00
AUTO LIABILITY—NONOWNERSHIP	
Bodily injury.....	\$100,000.00—\$ 300,000.00
Property damage.....	20,000.00
EMPLOYEE HONESTY BONDS	
Executive Secretary-Treasurer.....	\$ 5,000.00
Secretary.....	5,000.00
ALL RISK—CAMERA FLOATER.....	\$ 200.00

INVESTMENT BONDS

September 30, 1963

Schedule 1

BONDS	Series	No. Bonds	Dated	Due	Value at Maturity	Cost	Value at 9-30-62	Value at 9-30-63
U. S. Savings.....	J	13	5-1-55	5-1-67	\$ 6,500.00	\$ 4,680.00	\$ 5,525.00	\$ 5,707.00
U. S. Savings.....	J	11	12-1-55	12-1-67	11,000.00	7,920.00	9,207.00	9,504.00
U. S. Savings.....	J	1	12-1-55	12-1-67	500.00	360.00	418.50	432.00
U. S. Savings.....	J	1	1-1-56	1-1-68	1,000.00	720.00	837.00	864.00
U. S. Savings.....	J	2	2-1-56	2-1-68	2,000.00	1,440.00	1,674.00	1,728.00
U. S. Savings.....	J	2	7-1-56	7-1-68	2,000.00	1,440.00	1,648.00	1,700.00
Total.....					<u>\$23,000.00</u>	<u>\$16,560.00</u>	<u>\$19,309.50</u>	<u>\$19,935.00</u>

(Exhibit "A")

What Our Neighbors Are Thinking
or
The Other Side of the Coin

SEVERAL MEMBERS of The Medical Society of Virginia took your journal to task for publishing a Letter to the Editor by Dr. Amos R. Koontz entitled "Uhuru" in the August issue of the Virginia Medical Monthly. Admittedly this dealt with a controversial subject, so in order that equal time and billing may be given to the other side of the question, an editorial, which appeared in the October number of the Massachusetts Physician, is reprinted below.

This journal (circulation over 9,800) is published in Boston and, judging from the item at hand, carries on, in the usual tradition, the broad culture, the search for truth, the detached objectivity and the devotion to belles-lettres, that have characterized New England writers since the days of William Lloyd Garrison, Harriet Beecher Stowe and Mary Baker Eddy. This remarkable bedroom skit which features a "smug" lady and a "dirty" man follows:

"OVERHEARD IN THE BEDROOM

A National Debt

She: I never saw anyone get so dirty on his day off. You're soiling my spreads.

He: If you want garden work done, I'll either have to get dirty or get Joe. I don't mind the feel of the earth once in a while, but as a steady diet it's too rugged. Why did you let Joe go? He kept the place looking pretty good, I thought.

She: He's potted half the time and apparently never bathes. Besides, I just don't like colored people.

He: I happen to know Joe has family problems he can't lick. He drinks himself half crazy to keep his sanity. Do you know I have white patients I can't stay in the room with either? I prescribe daily baths with a special antiseptic soap. Joe probably hasn't believed refinement was possible or helpful to him, he's too beaten down in spirit.

She: I know what you mean by family problems. Alberta told me he threatened to pour gasoline on her the other night and set fire to her, he was so drunk. I heard somewhere that one-third of the inmates at Walpole Prison are colored. It's hard to trust a possible criminal.

He: Ever stop to think what made them that way?

She: Well, I suppose they are shiftless, lazy, of low moral fibre and that the law catches up with them either because they can't stay out of trouble or aren't smart enough not to get caught.

He: Seems to me you are forgetting that we have in this country some very intelligent, educated, refined and charming Negroes. You can find dregs in any race. The more a race is persecuted, the more dregs.

She: The Southerners keep them in their place. We don't seem to be able to do that up here.

He: King George tried to keep us in our place, too, and oppressed us until we revolted. When we revolted, we were arrogant, sneaky, hostile and murderous.

She: Oh, that's not the same situation at all.

He: I know it isn't. King George didn't make slaves of us. We committed the heinous crime of separating human beings from home, family and liberty in Africa. We brought them to our country in degradation and sold them to the highest bidder with less feeling than we would auction off an antique. Frequently, half of these humans did not survive the trip, so awful were the conditions. Then the "owners" sat around on big plantations, drinking cool juleps while the blacks did the work for them. For a show of rebellion they were horsewhipped or rolled down hill in a keg lined with spikes. They were denied education, refinement, dignity, decent standards of living and attention to health.

She: My, you're all worked up.

He: That's not all. You're a good religious woman, and you know the commandments say to love your neighbor as yourself. In our treatment of the Negro we have not done that, but we have exploited him to death. I think for inflicting such mass horror that the whole nation has a major catastrophe coming to it. As a nation we have tolerated persecution too long for the country's safety. Right all the wrongs we have inflicted on the Negro and then start talking smugly, if you will.

She: I didn't mean to be smug.

He: All right. Southerners won't like doing their own work; they won't enjoy giving up that feeling of importance they get from lording it over the black; and they won't like giving up the wealth they accumulated from exploiting the Negro, but they sure got that and a lot more hell coming to them for their abuse of human rights. Segregation (sic) by a gradual process would seem ideal but in too many instances this would be a device to prolong the status quo with no honest attempt to improve it. The righting of this wrong is too long overdue as it is.

She: Whew! What do you want me to do, invite his family to dinner?

He: You don't have to do that. Just be considerate. Give him his job back. Send his wife a birthday card. Threaten to send for the cops if you catch him liquored up on the job, but give him one of my cigars when he does his best. Send him home with a feeling he is a little bit important.

She: If I do that, will you stop sitting on my clean spreads with your messy work clothes?"

With this behind us, we will leave this vexatious subject and return full-time to the dissemination of medical information, which, after all, is the primary purpose of the Virginia Medical Monthly.

HARRY J. WARTHEN, M.D.

New Members.

The following new members were received into The Medical Society of Virginia during the month of October:

Robert Laurence Adeson, M.D.,
Alexandria
Charles Leon Burns, Jr., M.D.,
Winchester
Johnson Teel Carpenter, Jr., M.D.,
Charlottesville
Frank Bryan Clare, M.D., Chesapeake
William Perry Cooksey, M.D., Richmond
Charles William Coppedge, M.D.,
Farmville
John William Dickerson, M.D.,
Lynchburg
Porter B. Echols, Jr., M.D., Lynchburg
Ramon Garcia, M.D., Alexandria
Guy Morley Harbert, Jr., M.D.,
Charlottesville
David Harold Harpole, M.D., Roanoke
Robert Nathaniel Henderson, M.D.,
Richmond
Raymond Jack Irons, M.D., Lynchburg
Calvin Murry Kunin, M.D.,
Charlottesville
John Francis Kurtzke, M.D., Falls Church
John Holloway Milam, M.D., Winchester
M. Pinson Neal, Jr., M.D., Richmond
John Joy Payette, Jr., M.D., Culpeper
Ernest George Rafey, M.D., Falls Church
Robert Douglas Ralph, M.D.,
Falls Church
Heinz H. F. Schneidemandel, M.D.,
Arlington
Julian Wood Selig, Jr., M.D., Norfolk
Alberto de Jesus Taboada, M.D.,
Falls Church
— Henry John Waive, M.D., Portsmouth
Karl Kenneth Wallace, Jr., M.D.,
Virginia Beach
Jacob Charles Zillhardt, M.D., Fincastle

Virginia Section, American College of Physicians.

The business meeting of the Section was held in Roanoke on October 7th with Dr. Walter P. Adams, Norfolk, chairman, presiding. Fifty-seven members and guests were in attendance. Dr. Julian Beckwith, Charlottesville, was elected chairman for the coming year, and Dr. W. H. Harris, Richmond, re-elected secretary-treasurer.

The next meeting of the Section will be held at the University of Virginia Hospital, Charlottesville, on February 15, 1964.

The Virginia Orthopedic Society

Held its annual business meeting in Roanoke on October 7th, with thirty-five members present. New officers elected are: president, Dr. John A. Vann, Norfolk; vice-president, Dr. Bradford S. Bennett, Winchester; and secretary-treasurer, Dr. Earnest B. Carpenter, Richmond.

Virginia Chapter, American College of Chest Physicians.

At the annual meeting of the Virginia Chapter, held in Roanoke on October 8th, Dr. Graham H. Bourhill, Richmond, was elected president; Dr. Charles L. Savage, Waynesboro, vice-president; and Dr. L. James Buis, Richmond, secretary-treasurer.

Virginia Society of Anesthesiologists.

The semi-annual meeting of this Society was held in Roanoke on October 6th. There was an attendance of twenty-four members. The guest speaker was Dr. William S. Howland, Chairman of the Department of Anesthesiology of the Memorial Sloan-Kettering Cancer Center of New York City. He spoke on Problems Associated with Massive Blood Transfusions.

Virginia Radiological Society.

At the meeting of this Society, held in

Roanoke on October 6th, Dr. Thomas E. Padgett, Portsmouth, was installed as president; Dr. James G. Snead, Roanoke, named president-elect; and Dr. John Ratliff, Newport News, secretary-treasurer.

The interim meeting will be held at the Homestead, Hot Springs, April 24 and 25, 1964.

Dr. William S. Dingledine,

Richmond, has been appointed medical director of the Virginia Electric and Power Company, succeeding the late Dr. Maynard Emlaw.

Pension Granted in 1651.

Twice a year Dr. Thomas Walker, Richmond, receives a check for about \$7.80 because the husband of one of his ancestors was hanged for helping King Charles II of England escape from Oliver Cromwell three centuries ago. He is the recipient of the pension that has been paid to the descendants of a single family line since the early 1660's. Dr. Walker receives a quarter share of the original pension of 50 pounds a year. The pension was set up by Charles II and was to "go on forever".

Southeastern Surgical Congress.

The 1964 meeting of the Congress will be held on the S. S. *Hanseatic*, sailing from Port Everglades, Florida, on March 21st and returning on the 28th. Stops will include St. Thomas, San Juan and Nassau.

For further information write, Dr. A. H. Letton, secretary-director, 340 Boulevard, N. E., Atlanta 12, Georgia.

Dr. Donald Shotton,

Lynchburg, has been appointed chairman of the advisory committee to the Board of Directors of the University of Virginia Medical Alumni Association.

Dr. Hoover Receives Citation.

The Virginia Rehabilitation Association has presented its R. N. Anderson Award to

Dr. Roy M. Hoover, Roanoke. He was cited as "an outstanding Virginian, recognized for his highest achievement and greatest contribution to the rehabilitation of disabled Virginians."

Dr. E. Claiborne Irby,

Richmond, has been named assistant medical director for Reynolds Metals Company. He has been a physician in the medical department at the company's general offices in Richmond since 1959.

Office Space Available

In Medical Arts Building, Richmond. Suite of the late Dr. A. S. Lilly. Contact Mrs. Lilly, telephone EL 5-7379. (*Adv.*)

Medical Illustration Service.

We will prepare art-work, charts, graphs and diagrammatic material to your written specifications for papers, lectures or other needs. Rapid, neat service. Reasonable rates. Write N. Apgar, 2207 Buford Road, Richmond, Virginia 23235. (*Adv.*)

Training in Anesthesiology.

Physicians wishing postgraduate training of three months or more or residency in anesthesiology are invited to contact D. W. Eastwood, M.D., University of Virginia, Charlottesville. (*Adv.*)

Psychiatric Residences for G.P.S.

NIMH residency training in approved three year program. Stipend \$11,500 to \$12,000. Applicants must have completed four years or more of practice in field of medicine other than psychiatry after an approved internship. Applicants should not be over 40 years of age. Address inquiries to Chairman, Department of Psychiatry, Medical College of Virginia, Richmond, Virginia. Include curriculum vitae. (*Adv.*)

G. P. with Interest in Internal Medicine.

Needed at Herndon in Fairfax County, 25 miles from Washington, D. C. Near

Dulles Airport. Group practice of two G. P.'s now with five specialists in near future. Salary 1-2 years and then partnership. Close to Reston and Sterling Park. 49-room medical center (x-ray, laboratory, EKG, audiometer, emergency room, physical therapy equipment and eight visiting specialists—complete medical facilities planned in future). Hospitals in Leesburg (18 miles) and Fairfax (Fairfax Hospital 20 miles). Ample community stores. Churches of most denominations in area. Ambulance service. Good schools. A growing area. Branch offices in Airport Terminal Building and Sterling Park at present. Contact Dr. John H. Renner, Herndon Medical Center,

Herndon, Virginia. Phone 703-437-1100. (*Adv.*)

Wanted

Board eligible or certified radiologist as second man in a well-established group in West Virginia. Write #70, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia 23221. (*Adv.*)

Obstetrician-Gynecologist Wanted.

Group of nine physicians need obstetrician-gynecologist. Prefer board certified or board eligible physician. Contact #75, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia 23221.

Obituaries

Dr. Wade Cleveland Payne,

Haymarket, died October 5th, having been in ill health for more than a year. He was seventy-eight years of age and received his medical degree from the University of Virginia in 1907. Dr. Payne practiced for a short time at Rapidan before locating at Haymarket where he had been in active practice until his retirement about two years ago. He was active in religious and civic affairs in his community, having served as Town Councilman, first president of the Gainesville District Volunteer Fire Department and a member of the Ruritan Club. Dr. Payne had been a Mason for more than fifty years. He had been a member of The Medical Society of Virginia since 1908. A son survives him.

WHEREAS, we, the members of the Medical Staff of the Fauquier Hospital, have been brought to deep sorrow by the death of Dr. Wade Cleveland Payne on October 5, 1963, and have met to record and embody our sense of loss.

WHEREAS, Dr. Payne's long, productive activities in the profession of the practice of medicine have been of profound and lasting benefit to the commu-

nities which he has served both through his personal contacts and through his collective community endeavors.

WHEREAS, Dr. Payne's personal religious leadership and his interest in civic advancement proved beyond a doubt his loyal support of all efforts toward human achievement.

WHEREAS, Dr. Payne's demonstrations of love and devotion throughout his entire life to his family, loved ones, and friends have been an inspiration to all who came in contact with him.

WHEREAS, Dr. Payne's wisdom and keen insight into the problems of human nature were so freely and gracefully given to many in all walks of life.

NOW THEREFORE, we do hereby order that these resolutions be placed in the minutes of the Medical Staff, a copy be sent to The Medical Society of Virginia, to the Fauquier Democrat Newspaper, and to his family in token of this great sorrow which has befallen them.

Dr. Albert Pierce Traynham,

Sweetsprings, West Virginia, died November 5th at the age of seventy-six. He graduated from the Medical College of Virginia in 1913. Dr. Traynham practiced in Richmond until 1951 when he moved to West Virginia. He had been a member of

The Medical Society of Virginia since 1916 and was awarded his certificate for fifty years of practice at the last annual meeting.

His wife and a son survive him.

Dr. John Thomas Daves,

St. Simons Island, Georgia, died September 17th at the age of seventy. He was a native of Virginia and a graduate of the University of Maryland Medical School in 1917. Dr. Daves practiced surgery in Danville from 1921 to 1955. He served as a lieutenant in the Medical Corps during World War I and was a member of the Selective Service System during World War II. He was with the Veterans Administration in Columbia, South Carolina, before moving to Georgia. Dr. Daves had been a member of The Medical Society of Virginia since 1923.

His wife and a daughter survive him.

Dr. Hammer.

WHEREAS, in the passing on the 19th of July, 1963, of Dr. Henry Hamilton Hammer, we, the members of the Danville-Pittsylvania Academy of Medicine, recognizing the great loss to us and to the community wish to pay tribute to his memory.

Dr. Henry Hamilton Hammer, a native of Narrows, was 60 years of age at the time of his death.

He attended Emory and Henry College. Dr. Hammer received his degree in medicine from the University of Virginia School of Medicine in 1933, and his internship was served at City Memorial Hospital, Winston-Salem, North Carolina.

Dr. Hammer served the community of Chatham for the past 29 years as a beloved physician. He

enjoyed a wide private practice and for many years had served both Chatham Hall and Hargrave Military Academy as physician for the schools.

He had been county medical examiner for Pittsylvania County for more than 20 years.

Dr. Hammer held membership in the American Association of School Physicians, Danville-Pittsylvania Academy of Medicine, American Society of Hypnosis.

He was also a member of Acca Temple of Shriners in Richmond, Pittsylvania Lodge No. 24, A. F. & A. M., and was a charter member and past president of the Chatham Rotary Club.

His favorite charity was the Heart Fund to which he devoted much time and money.

He was an active member of the Watson Memorial Methodist Church.

As Chatham's oldest physician both in years and service, Dr. Hammer's devotion to his family, his profession, his patients and his friends will be remembered by all who enjoyed his acquaintance. "Happy" as he was known to his friends, never failed to answer a mercy call and his optimistic spirit and sportsmanlike attitude toward the problems of life endeared him to a host of friends from every walk of life.

WHEREAS, we his fellow members of the Danville-Pittsylvania Academy of Medicine unite with his grateful patients and associates to share with his family in their bereavement.

NOW, THEREFORE, BE IT RESOLVED by the Danville-Pittsylvania Academy of Medicine that we convey to his family our sincere sympathy and deep respect for his memory.

BE IT FURTHER RESOLVED that a copy of this resolution be sent to his family, a copy to the Virginia Medical Monthly and a copy be preserved as a part of the permanent records of this body.

JOHN R. EGGLESTON, M.D., *Chairman*

GIRARD V. THOMPSON, M.D.

HUGH H. WILLIS, JR., M.D.

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